

Wyoming Game and Fish Department Programmatic Evaluation

Final Report – September 21, 2016

**Wildlife Management Institute, Inc.
2016**



EXECUTIVE SUMMARY

The Wildlife Management Institute (WMI) responded to a Request for Proposal released by the State of Wyoming in September 2015 to review 12 selected programs within the Wyoming Game and Fish Department (WGFD). The 12 programs to be evaluated were selected by the Governor's Task Force on Fish and Wildlife Resources (Task Force). The purpose of the program evaluation was to assess the efficiency and effectiveness of the 12 programs. This program evaluation was not a financial audit.

WMI met with members of the Task Force, WGFD staff, reviewed and analyzed numerous documents requested from and provided by WGFD, interviewed WGFD Commissioners, and compared WGFD programs to information from adjoining state fish and wildlife agencies.

Based on our program evaluation, WMI provided recommendations to improve individual program areas. WMI also provided recommendations that would incorporate a broader strategic look at all WGFD programs. These recommendations include a formal public engagement process to ensure that WGFD program goals and objectives are based on an evaluation of the needs and desires of WGFD stakeholders.

OVERARCHING CONCLUSIONS AND RECOMMENDATIONS

WMI found the majority of the 12 program areas evaluated in this review were individually well managed and each serves an important role in accomplishing the WGFD mission. Improvements could be made in most of the program areas, but none of them stand out as being in need of major revision or elimination. WMI believes the continued concern related to several of these program areas, and questions regarding the efficiency of WGFD, stem from a lack of a comprehensive, strategic direction for the agency and from inadequate engagement with the citizens of Wyoming.

WGFD's current CMS Strategic Plan¹ identifies 23 different programs, for which there are a total of 48 performance measures. WMI found that most of these performance measures were output-based rather than outcome-based, and were indicators of biological elements such as number of fish stocked; number of pheasants released; numbers of elk fed; acres of habitat protected. While such

¹ Wyoming Game and Fish Department Comprehensive Management System Strategic Plan FY17-FY21. WGFD. Cheyenne. 38 pp.

measures are easy to develop through internal review of existing program direction and capacity, they address only half of the agency's mission—"Conserving Wildlife". They do not provide meaningful direction for the second part of the agency's mission – "Serving People."

To fulfill both elements of the agency mission, WGFD's goals and objectives must be established with equal consideration of agency and biological capacity and public expectation or need. Specifically, WMI encourages WGFD to embark on a rigorous public engagement effort in order to develop a new strategic plan based on scientifically derived assessments of public attitudes of all Wyoming residents. These assessments may include: public meetings, human dimensions research, public opinion surveys, and focus groups.

The consequences of WGFD's reliance on performance measures for only half of the agency's mission are evident in WGFD's response to a projected budget shortfall in 2013 and the ensuing events. Faced with projected budget shortfalls in 2013, WGFD reduced its budget for Fiscal Years 2013 (3% reduction) and 2014 (6.5% reduction). When implementing these reductions, WGFD minimized budget cuts to biological and management-oriented programs, and shifted the impact disproportionately to other program areas, notably administration, conservation education, outreach, and human dimensions. This approach enabled WGFD to achieve many of the performance measures for "Conserving Wildlife" such as miles of streams surveyed, but left the agency unable to assess indicators of public need or support. Staff reductions in the outreach and human dimensions programs, and thus loss in public engagement expertise, were particularly detrimental in this regard. Declining public awareness of, and support for, WGFD services and accomplishments is a predictable result of reduced resources and focus on public engagement.

Due to unanticipated increases in fishing license sales in 2014–2016 and the largest surge in Wildlife and Sport Fish Restoration program funds in the 75-year history of that program the budget shortfalls anticipated in 2013 did not occur. Consequently, rather than facing a fiscal crisis, WGFD developed a surplus in its operating fund. WMI recommends that WGFD take advantage of this opportunity to reverse the impact of the decisions that may have adversely affected the agency's capacity to assess the interests of and engage with the public.

WGFD has already taken one important step in this direction through its participation at Level 2 in the America's Wildlife Values (AWV) project.² The AWV

² See: <http://www.wildlifevalues.org/>

project will measure public values toward wildlife in all 50 states. By choosing to participate at Level 2, WGFD will be able to add specific management-related questions to the survey administered to Wyoming residents. This will give WGFD greater insight into Wyoming citizens' values in relation to specific topics.

WGFD should supplement the information gained through the AWV project with additional human dimensions research focused on some of the issues of concern that led to this review. Human dimensions research provides insight into public attitudes, values, desires, and behaviors that would assist WGFD in effective decision-making as stewards of public resources. Fish and wildlife agencies across the nation are using this social research to complement their existing knowledge of the biological process associated with wildlife and habitat conservation. Knowledge of wildlife, habitat, and people are essential for a modern fish and wildlife agency.

For example, assessment of the importance of the bird farm program to all hunters, bird hunter's willingness to pay higher fees for pheasant hunting, or the need for a cap on the total number of stocked birds a hunter can take per year would enable WGFD to develop measures related to how this program serves bird hunters and other citizens. Fortunately, human dimension research can provide effective tools to assess public opinions on complex natural resource management issues such as these.

In addition to the above human dimensions inquiries, WGFD should explore additional ways to engage the public in program decision-making. Like most state wildlife agencies, WGFD has often relied on public meetings as a way to interact with citizens, in spite of the known limitations of this process to effectively and accurately represent the public's values and opinions.³ Public meetings usually attract strong proponents and opponents of an issue with no measure of the public opinion in between those disparate views. Task forces or other forms of stakeholder working groups that engage a broad range of people and create an environment where competing interests must engage with each other and the agency in problem solving rather than simply lobbying for their preferred outcome are increasingly being used by state agencies to address the controversial issues these agencies face. WMI is aware of several states' strategic planning processes built on this model and would be willing to make further recommendations to WGFD in this area if requested.

³ Peterson, C.C and T.A. Messmer. 2010. Can public meetings accurately reflect public attitudes toward wildlife management? *JWM* 74(7):1588-1594.

Through an increased focus on human dimensions inquiry and improved public engagement, WGFD can not only gain better insight into what its public wants, it can build greater confidence in the public that the agency is indeed, “Conserving Wildlife – Serving People.”

State fish and wildlife agencies are highly dependent on the sale of hunting and fishing licenses, permits, and stamps and matching federal funds from the Wildlife and Sportfish Restoration Program for the majority of their revenue. In the last 8 years, federal excise taxes directed to the Wildlife and Sport Fish Restoration Program set record highs that are attributable to political and social factors. WMI believes that this trend is unsustainable in the long term. As the second largest source of revenue for most agencies, Wildlife and Sport Fish Restoration funds will likely diminish in time requiring these agencies to consider license fee increases or alternative revenue sources to meet the rising expense of operating a modern fish and wildlife resource management agency.

During the last 2 decades, license fee increases in Wyoming occurred about once every 2-5 years. WGFD’s last license fee increase occurred over 8 years ago in 2008; a proposed increase in 2012 was not approved by the legislature. WGFD and the Commission should consider the impact of future, rising expenses and the ability of WGFD to meet those expenses given its current revenue sources.

WMI provided a synopsis of our findings and conclusions with respect to the 12 program areas identified in the contract as follows:

Fish Hatcheries - WGFD operates a highly efficient, professionally managed network of 11 hatchery facilities. This program is capital-intensive and requires significant, highly skilled personnel. Hatchery goals are set 2 years in advance based on input and needs from fisheries management staff to optimize production and return on the investment in this program. Hatchery raised fish are essential for maintaining the quality and quantity of fishing opportunities that generate \$6.3 million in revenue for the state annually through license sales and \$476.8 million in total economic impact to the state annually. WGFD exchanges coldwater fish produced in its hatcheries for warmwater species produced in neighboring states to provide warmwater fishing opportunities. **WMI recommends that WGFD conduct human dimensions research to measure support and demand for the program and public attitudes on regulatory action to manage waters across the State of Wyoming. This information would provide public satisfaction indices, measures of the**

willingness to pay for existing services, and may further refine hatchery production and stocking schedules.

Elk Feedgrounds - WGFD operates 22 elk feedgrounds in western Wyoming to sustain higher numbers of elk and greater hunting opportunity than could be supported given available habitat and landowner tolerance; to maintain temporal and spatial separation of elk and cattle to reduce the risk of transmission of brucellosis; to reduce the amount and cost associated with elk depredation on agriculture and other conflicts; and to increase public safety on certain highways. The degree to which the feedgrounds program pays for itself depends on what factors are considered. However, eliminating the feedground would result in significant adverse fiscal impacts in terms of reduced license revenue to WGFD, increased depredation payments, loss of hunting opportunities, and loss of economic impact associated with hunting and tourism. It would also have a negative impact on WGFD-landowner relationships. Given the potential for Chronic Wasting Disease and other wildlife diseases to reach elk in western Wyoming, **WMI recommends that WGFD develop more detailed public outreach strategies and initiate human dimensions research into the impacts of hunters' interest in harvesting elk if CWD or other wildlife diseases are documented in feedground elk units. In addition, human dimensions research may provide willingness to pay information relative to the Elk Special Management Permit.**

Bird Farms - The operating costs for WGFD's bird farms exceed the revenue generated through sales of pheasant hunting permits. The hunting opportunity generated by the bird farms has long been associated with the introduction of first time hunters to the hunting experience and may serve a role in hunter recruitment, retention and reactivation (though this has not been documented in WY or any other state that conducts pheasant stocking programs). WGFD should continue to evaluate opportunities to enhance revenue through this program by increasing the price of the pheasant permit. The Commission may also want to explore the need for some upper limit to the total number of pheasants that can be taken by any individual in one season to ensure equitable allocation of hunting opportunity. **WMI recommends that WGFD evaluate the statewide public support for this regionally-based program and assess the willingness to pay additional fees to increase program revenue. This evaluation should include prioritizing program expenditures and allocation of resources with respect to other WGFD programs.**

Employee housing - WGFD provides housing for personnel at Department fish hatcheries, bird farms, and the research laboratory and for Game Wardens in multiple communities across Wyoming. The cost effectiveness, locations, and purpose of having department housing has been evaluated at least 4 times since 1970 prior to this review, with the most recent being in 2013. Each of these reviews has resulted in the same basic finding, that providing employee housing is a cost-effective and often necessary element in achieving WGFD's mission. The fact that no other state in the region employs a similar system of warden stations may lead to repeated questioning of the value of providing housing for game wardens. **WGFD may be able to reduce public concern associated with employee housing by documenting clear goals for the program, assessing program costs on an annual basis, and reporting that information along with documentation of the public benefits and services provided by Department housing to the Commission.**

Vehicle fleet - WGFD has a comprehensive and logical Vehicle Use, Maintenance, Purchase, Disposal and Record Keeping Policy and has a systematic and objective approach for vehicle replacement. WMI recognizes the importance of vehicle fleet management for employee and public safety, as well as, the sophistication of equipment necessary for modern law enforcement vehicles and associated equipment. Vehicle fleet size has been reduced from 636 in 2012 to 583 in 2015 with most of the reductions occurring with 1/2 and 3/4 ton, 4WD pick-up trucks. Vehicles with minimal annual use are evaluated for elimination from the fleet each year. Assessments of the best point to trade in vehicles were conducted in 2008 and 2012. Doing this type of analysis every four to five years is prudent and another assessment in the near future is recommended. With 27 cars, vans, utility vehicles, pick-ups, and heavy trucks being driven less than 5,000 miles each year, there is likely opportunity for additional fleet reduction in these categories. **WMI recommends that WGFD continue its efforts to reduce the numbers of these vehicles with low mileage.**

Habitat management - WGFD's habitat management program is well designed and managed to focus efforts on the most important habitats in need of conservation or restoration. WGFD's Strategic Habitat Plan (SHP) provides excellent, programmatic guidance and is reviewed and updated on a regular and appropriate schedule. The process used to identify, select, fund and monitor habitat projects is thoroughly documented, objective and transparent. WGFD habitat dollars are heavily leveraged with partner and private funds, which greatly increases the impact of the program. WGFD's habitat program should continue to operate as it does currently, taking advantage of partnerships to

leverage Department resources in pursuit of the goals and objectives outlined in the SHP. **WMI recommends that in future iterations of the SHP, WGFD should strive to increase the degree to which objectives in the SHP are quantitative and time bounded to facilitate even better assessment of program accomplishments.**

Access for hunting and fishing - WGFD has established a multi-faceted public access program that has evolved and has been customized to the needs and desires of Wyoming hunters and landowners. The WGFD access program is similar in nature to programs in surrounding states. Enrollment in the voluntary, private landowner access programs has continued to grow through time and is a testament to the ability of WGFD to be responsive to land owner needs and hunter expectations. WGFD and the Commission should determine the magnitude of the AccessYES (formerly the Private Lands/Public Wildlife) program in terms of desired acreage per region and funding necessary to meet demands from landowners and hunters. Land acquisition, easements, leases, etc. for public access are appropriate approaches to meet the increasing public demand for public access. **WMI recommends that strategic public access goals should be established and communicated to the public. Hunter and angler behavior assessments may provide information that will guide decision-makers about the appropriate size and scope of the AccessYES program on a regional and statewide basis.**

Recruitment, retention and reactivation of hunters and anglers - WGFD is one of the few state fish and wildlife agencies that have been leaders within national efforts to improve recruitment, retention, and reactivation (R3) strategy and implementation. As a result of this national-level involvement, the WGFD has completed numerous efforts (R3 strategic focus planning, customer tracking, formative evaluation pilots, license purchase trend report) that position the agency to begin very strategic and effective R3 programs in the future. In the 10 years since 2005 and in contrast to many other states, Wyoming has experienced some growth in resident hunting licenses sales and stable resident fishing license sales. However, current staffing and budget cuts and a lack of commitment to outcome-based evaluation of all R3 efforts have halted the momentum of R3 implementation in the agency. Given that hunter, angler and trapper participation account for more than three quarters of the WGFD annual budget income, **WMI recommends that the agency prioritize R3 efforts within the Conservation Education program to revitalize the program. Enhanced staff capacity would allow WGFD to pursue proven R3 programs in order to recruit, retain, and reactivate Wyoming hunters. The**

modest growth in the number of hunting and fishing license purchasers may not be adequate to replace retiring hunters and anglers in the future. Changing demographics in all states, including Wyoming, will require efforts to reach a broader constituency than in the past.

Information technology - The average uptime for department IT systems for FY 2015 was 99.3 percent, down from 99.7 percent in FY 2014. However this is still well above the 95 percent goal. Given that the IT/Public interface is such a mission-critical component of a modern state agency, WMI recommends moving their goal to 98 percent. WMI recommends that WGFD request additional appropriations to adequately support the continued efforts and necessary expansion of the WGFD IT Program. **WMI recommends that WGFD modernize mobile devices/data terminals for WGFD staff to collect biological, license holder, and law enforcement information and Internet Point of Sale (IPOS) equipment and software for license agents.** WMI finds that there is a significant need for additional funding to support dedicated application developers for Enterprise GIS. WGFD demand for GIS support continues to increase, even in the absence of adequate funding and positions. This is largely due to the internal needs for effective resource planning and management and the increasing external demands by regional and national initiatives. **WMI recommends that consideration of increased resources to help stabilize and modernize what has become an essential element for any modern, state fish and wildlife agency.**

Wyoming Wildlife magazine - Wyoming Wildlife is a successful, nationally acclaimed publication that has garnered more than 100 national awards since its inception in 1936. During that time, it has remained a general-interest publication focused on delivering scientific information to the public in a way that is digestible and enjoyable to read. Following a departmental reorganization in 2014, the magazine's staff has been reduced from a high of five to two personnel. Budget data reflect a 19.3% reduction in revenue following this cutback. Currently, the stated goal of 35,000 subscribers is not being achieved, with the magazine showing a steady decline in subscribers from 28,158 in 2014 to 23,846 in 2016, and a renewal rate of 80%. Subscription fees for the magazine have not increased in 15 years, and when compared with other similar publications produced by state fish and wildlife agencies, Wyoming Wildlife is underpriced. Its readers (two thirds of whom are out of state) have not been surveyed for their opinions on magazine content and delivery, making informed

changes or improvements to the magazine difficult. **WMI recommends that the WGFD develop a stated purpose and key metrics for the magazine and survey subscribers on a multi-year basis to evaluate the fulfillment of that purpose. Additionally, the WGFD should develop a “relationship focus” with its constituents, particularly Wyoming Wildlife subscribers, by better involving them in changes to the publication and being responsive to their desires and opinions (including online delivery of the magazine). WMI also recommends that the WGFD improve the tracking of revenue and expense data so that year-to-year analyses can be completed and return on investment can be determined.**

Conservation Education - The Conservation Education (CE) program is, by comparison to other WGFD efforts, a relatively new addition to the services provided by the WGFD and is still evolving. In 2015, it was moved from the Services Division to the Office of the Director, and the Regional Information and Education staff (who conduct most of the state’s CE programs) were placed under the authority of the Wildlife Division regional offices. The results of this reorganization and its impact on the delivery of regional and state-level CE efforts is not well understood since very little, if any, evaluation of CE efforts are conducted by the WGFD. CE program staff completed an inventory and program structure review of their programs in 2013, but staffing and budget cuts halted further progress in improving the effectiveness and delivery of these programs. Though the CE program incorporates some general performance measures, metrics or evaluation systems to track these measures are lacking. In addition, a lack of statewide CE goals and objectives has resulted in a continuum of CE efforts across the regions of the state, with very little guidance on CE priorities or resource allocation. **WMI recommends that the WGFD accomplish the CE program goals described in a plan approved by the Commission in July 2016 and require the establishment of measurable objectives, desired outcomes, and evaluation metrics for all CE efforts. WMI also recommends that WGFD emphasize the importance of adding staff capacity to the CE effort to deliver those outcomes. This capacity would allow coordination of the above efforts, and increasing the partnership of the agency’s CE efforts with external outdoor education organizations and programs.**

Overall financial review - The current budget for the WGFD is approximately \$82.6 million; of that amount 84% is derived from fishing and hunting licenses, stamps, and permits and federal Wildlife and Sport Fish Restoration Programs and State Wildlife Grants. Another 9% comes from other funds and 7% is provided by the legislature (General Funds) for specific programs. The WGFD

and grants have provided additional revenue for General Fund supported projects. Based on a three-year average (FY12-FY14), WGFD has directly provided about \$1.12 million per year in addition to the \$4.31 million per year from the General Fund and \$1.27 million per year from other grants.

The WGFD undergoes state level financial and programmatic audits annually. The Department of Interior's Office of the Inspector General (on behalf of the U.S. Fish and Wildlife Service) conducts an audit of federal aid apportioned to WGFD every 5 years. The last 3 reports (audit years 2000-2002, 2005-2007, and 2010-2015)⁴ found that WGFD "complied, in general, with applicable grant agreement provisions and requirements of the Acts, regulations, and FWS guidance." WGFD has extensive and comprehensive financial, programmatic, and performance tracking databases to assist WGFD administrators and Commissioners in decision-making.

Although WGFD carried a healthy Game and Fish Commission Operating Fund balance for a number of years, recent Commission action (January 2016) has committed a substantial portion of that fund. In June 2015, the fund balance was approximately \$56 million. Commission decisions allocated \$31.5 million as "reserve" funds, and designated about \$25 million for WGFD investments in the future of Wyoming fish and wildlife resources.

WMI recommends that WGFD and the Commission undertake human dimensions research to measure the Wyoming public's attitudes and values towards, and the economic importance of, fish and wildlife resources to the state. This research could identify all citizens' expectations of WGFD with respect to fish and wildlife population abundance and distribution, habitat management and public access, sensitive species management, landscape level conservation, and more. It could inform and identify the resources necessary to meet the public's expectations and provide choices and priorities for the public to decide about resources required and resource allocation. This information may lead to enhanced approaches to funding WGFD that would reflect the true benefits of the work WGFD does for all citizens of the state.

WMI recommends that this enhanced funding model provide long-term, sustainable funding to address current and projected conservation

⁴ U.S. Department of Interior, Office of Inspector General. 2004, 2008, 2013. U.S. Fish and Wildlife Service Wildlife and Sport Fish Restoration Program Grants: Awarded to the State of Wyoming.

challenges. In addition, the model should recognize the contributions of hunters and anglers but also consider the value of public benefits accrued by all Wyoming residents and non-resident visitors to the state. The current “user pays, public-benefits” model could be enhanced by including all “users” of Wyoming’s public resources in the funding model.

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INTRODUCTION

Founded in 1911, the Wildlife Management Institute is a private, nonprofit, scientific and educational organization, dedicated to the conservation, enhancement and professional management of North America's wildlife and other natural resources. Since that time WMI has been involved in national, regional, and state wildlife conservation efforts, projects, programs, and policy development. WMI has conducted more than 70 program and project reviews for state and federal agencies. We administer and host the North American Wildlife and Natural Resources Conference, the largest conference for state, federal, and conservation organization leadership in North America. WMI currently provides the following services for the professional wildlife community: science and management review and assistance, program review and policy development, wildlife information and education, project coordination and administration, and service to the profession and our partners. WMI is a science-based, independent, nonpartisan, and non-membership organization. As such, we provide objective evaluation, conclusions, and recommendations to our clients.

WMI responded to the Request for Proposal Number 0082-A released by the State of Wyoming, Department of Administration and Information, Procurement Section on September 21, 2015. The contract between WMI and the WGFD was finalized on October 7, 2015. WMI conducted WGFD staff interviews in Cheyenne, WY October 21-23, 2015. At that time and during the course of our review, WGFD provided WMI with numerous documents for our review. In addition, WMI contacted various adjoining state fish and wildlife agencies to compare their programs to the administration of selected programs within the WGFD.

The story of Wyoming's Game and Fish Department is similar to other agencies across the country. With no laws or regulations, game and fish populations were over-harvested resulting in declines in overall numbers. In 1899, just nine years after attaining statehood, the legislature created the office of the State Game Warden. Over the next few decades the first State Game Wardens and Fish Wardens worked to slowly hammer out wildlife management policy and procedure that would become the beginning of modern management, benefiting wildlife and people alike.⁵

In 1921 the Game and Fish Commission was created. Efforts to take game census were in full swing and for the first time, approximate numbers of wildlife were

⁵ History adapted from <https://wgfd.wyo.gov/About-Us/About-the-Department>

known. It wasn't until 1929 that the legislature gave the Game and Fish Commission the ability to close hunting and fishing in an effort to restore fish and game populations to Wyoming after the days of early exploitation.

By the time World War II arrived, wildlife populations had rebounded. There was a serious shortage of manpower within Game and Fish. Rationing due to the war began to affect things like gasoline and sporting cartridges and the game herds continued to expand. By the time servicemen returned to Wyoming, wildlife was abundant with generous bag limits in place. Funds collected from license sales were beginning to show a surplus for Game and Fish.

In 1973 the Wyoming Game and Fish Department was created. Before this time, all Game and Fish personnel were employees of the Commission. The Commission became the decision making body appointed by the Governor to oversee the policies and decisions of the Game and Fish Department. This relationship between the Commission and WGFD still exists today, with seven Commissioners serving for six-year terms.

Today, the WGFD's constituents are a diverse group of Wyoming residents and non-residents who have an interest in, or are affected by, wildlife. WGFD continues to manage all wildlife for public benefits and, in cooperation with private landowners and public land management agencies, they advocate for habitat conservation to provide a wildlife legacy for the future. To constituents, WGFD is the state agency responsible for managing all the state's wildlife, excluding predatory animals and predacious birds, and conserving their habitat; controlling hunting and fishing; enforcing applicable laws; serving as an advocate for wildlife, wildlife habitat and all wildlife users; and expanding opportunities for the public to enjoy wildlife.⁶

Primary Functions of the Game and Fish Department:

- To conserve wildlife by providing wildlife and wildlife habitat management, including scientific data collection, law enforcement, wildlife/human conflict management, research, habitat conservation and wildlife health services.
- To serve people by managing wildlife populations, conserving resources through habitat mitigation activities, providing access for wildlife-associated recreation and providing information and education about wildlife and wildlife-related issues.

⁶ Adapted from the Situation Analysis in the Department's Strategic Plan 2010 - 2016

- To manage the human, fiscal, physical and other resources necessary to carry out our mission, including people, money, lands, information, buildings and other facilities needed to support wildlife conservation in Wyoming.

All resident wildlife within the state of Wyoming are property of the state. As the steward of these public trust resources, the Wyoming Game and Fish Commission and WGFD is tasked to “provide an adequate and flexible system for control, propagation, management, protection and regulation of all Wyoming wildlife” (Wyoming Statutes [W.S.] Title 23, Article 1, section 1-103). W.S. Title 23, Article 3 provides broad regulatory powers and duties to the Commission. For purposes of this review, those relevant powers and duties include:

- Fixing seasons and bag limits.
- Acquisition of lands for fish hatcheries, wildlife propagation, hunting and fishing access.
- Propagation and exchange of birds, fish, and fish eggs for propagation or stocking purposes.
- Providing feeding for game animals, birds, and fish as deemed necessary.
- Supervision of fish and fish culture of a public nature.
- Prescribe and administer a licensing and permit system.
- Employment of office and field employees to carry out the provisions of the Act.
- Authorization of the collection, classification, and dissemination of data and information at its discretion that promote the purposes of the Act.
- Promulgate orders considered necessary to carry out the intent of the Act.
- Abolish existing and create new divisions within the Department to further the purposes of the Act.
- Approve and make public budgets and establish policy for the Department.
- Regulate the use of vehicles owned or leased by the Department.

The WGFD was created by W.S. Title 23, Article 4, section 1-401. This Act established:

- a) The WGFD,
- b) Placed the WGFD under the direction and supervision of the Commission,
- c) The WGFD consists of the Director who is the chief administrative officer and such divisions as the Commission may create.

The Director, appointed by and serving at the pleasure of the Governor, was granted general supervision and control of all WGFD activities, functions, and employees of the WGFD under the direction and supervision of the Commission. The WGFD consists of various divisions including: human resources, legal services, habitat

protection, fiscal, services, fish and wildlife. In addition, a policy and planning coordinator and communications director support the WGFD. This organizational structure and function is similar to other state fish and wildlife agencies across the nation.

The WGFD's headquarters is in Cheyenne. Regional offices are located in 8 geographical dispersed locations. Eleven fish culture stations, 2 bird farms, and approximately 50 warden stations are also located across the state. WGFD personnel are also located at the Thorne/Williams Research Unit and the University of Wyoming.

The WGFD currently operates under a strategic plan adopted in July 2011 and covering the fiscal years of 2012 to 2016. The mission of the WGFD is "Conserving Wildlife – Serving People." The strategic plan spells out the agency philosophy and vision that closely tracks the mission statement. The strategic plan details the situational analysis of the WGFD with respect to an agency overview, agency organization, fiscal narrative, constituent demographics, technological developments, economics, federal statutes and regulations, legal issues and self-evaluation. The plan presents an agency level approach that is stepped down to specific program areas. Agency level strategies are documented and include performance measures and steps to improve future performance. Program level strategies include: program mission, performance measures, and steps to improve performance in future years.

WMI was specifically tasked with evaluating the following program areas (Appendix A):

- 1) Fish Hatcheries
- 2) Elk Feedgrounds
- 3) Bird Farms
- 4) Employee Housing
- 5) Vehicle Fleet
- 6) Habitat
- 7) Access for Hunting and Fishing
- 8) Recruitment, Retention and Reactivation of Hunters and Anglers
- 9) Information Technology
- 10) Wyoming Wildlife Magazine
- 11) Conservation Education
- 12) Overall Financial Review

For each program area, WMI was asked to address the following questions.

- *When and why this program was originally established?*
- *What substantive changes have occurred since that time?*
- *What are the goals and objectives of the program?*
- *How are the goals and objectives determined and evaluated, and at what frequency?*
- *What is done to explore increasing revenue generated by this program?*
- *Can this program be combined with others to increase efficiency?*
- *What are the wildlife, public, and economic benefits provided by this program?*
- *Are there other options that provide the current level of services in a more efficient manner?*

METHODOLOGY

WMI conducted 3 daylong interviews with WGFD program leaders in October 2015. These interviews involved extensive program briefings, presentations, answers to WMI questions provided prior to and during the interviews, and the production of numerous documents, reports, public surveys, and presentations. WMI reviewed more than 330 separate documents (Appendix B) and files provided by WGFD at the request of WMI.

Following the review of these documents, WMI requested additional information that was promptly provided by WGFD. For selected program areas, WMI compared and contrasted WGFD approaches with those of other state fish and wildlife agencies. In addition, WMI conducted interviews with each of the WGFD Commissioners to gather their perspectives on the program areas.

Based on our review of this information and our professional judgment, WMI developed answers to the questions posed by the statement of work and offered findings, conclusions and recommendations. These conclusions and recommendations are provided to the Governor's Task Force on Fish and Wildlife Resources, WGFD, Commissioners, and the public for their consideration.

WMI would like to thank WGFD staff and Commissioners for their timely, comprehensive, honest and straightforward responses to our information requests and questions.

FINDINGS AND CONCLUSIONS

Fish Hatcheries

When and why this program was originally established?

The Wyoming territorial legislature established the first fish hatchery in the Territory of Wyoming, located near Laramie in 1884 to supplement native trout stocks. In 1895, the legislature approved another hatchery that was built near Dayton. In the early 1900's, the U.S. Bureau of Fisheries (the precursor to the current U.S. Fish and Wildlife Service) opened a hatchery near Saratoga. By 1921, 6 state-run hatcheries were in operation to provide trout to counties for stream and river stockings. At the time, one of the reasons for fish hatcheries and stocking programs was to meet the actual or perceived demands of non-resident anglers visiting Wyoming, following the construction and improvement of the state's highway system. At that time, hatcheries and stocking programs were not very sophisticated (rearing ponds and milk cans) and the limited hatchery locations occasionally resulted in production losses due to flooding.

There was resurgence in the fish hatchery system in the 1930s. Federal relief projects such as Civilian Conservation Corps, Emergency Relief Administration, and the Works Progress Administration, improved the knowledge of Wyoming fisheries, infrastructure, and hatchery facilities. Within a decade, hatcheries benefited from new construction, new water supplies, and electricity, which provided the use of refrigeration and pumps. Eight hatcheries were in operation in the 1940's. The hatchery system underwent extensive renovation and modernization in the 1950's. The hatchery and rearing system made improvements in size, disease prevention, feeding formulas, and stocking priorities based on biological information collected in the field by WGFD biologists.

What substantive changes have occurred since that time?

Advancements in fish hatcheries and rearing stations have continued from the 1950s to present day. Currently, WGFD operates 10 manned facilities and 1 unmanned facility. The diversity of species managed for egg production, brood stock and stocking has increased significantly since the hatchery system originated in 1884. Currently up to 17 species/strains of salmonids and coolwater fish are produced by the hatchery system. The science of fish culture has improved dramatically with respect to disease treatment and management, technology, biosecurity, feed types and management, water management (quantity and quality),

and stocking protocols. Modern day fish culture is a mixture of highly scientific, biological knowledge and engineering expertise. As a result of these advancements, fish culture has become more efficient. These efficiencies include improved feed selection and management, and an integrated hatchery system that recognizes independent, inherent hatchery strengths and weaknesses. Functions such that the timing of spawning, rearing, and shipment can be scheduled two years in advance to meet the projected demands of recreational anglers in Wyoming.

Facility upgrades and renovations in the last decade have resulted in improvements in fish condition, survival, and operational efficiencies. These improvements include replacement of linear raceways (that cannot deliver consistent water quality or oxygen along the raceway) to circular tanks with dual drains that minimize water loss but maximize waste removal from the tanks. Additional technological improvements (e.g., particulate and gas filter systems) have reduced water use and improved fish condition. For example, the Dubois hatchery can now raise 30,000 pounds of fish with 400 gallons of water per minute (gpm) rather than the historical requirement of 1,600 gpm. The Speas Hatchery raises 4 times the pounds on average as it did previously with the same amount of water flow. Many of these improvements have been built by existing hatchery staff

Careful coordination among hatcheries based on years of experience and research dictate the timing of activities (spawning, eyed egg shipments, growth, and stock shipment). In addition to changes in operations to make fish rearing more efficient, WGFD has taken steps to improve coordination and integration of the overall hatchery system (see next section) as well as the process of stocking reared fish. WGFD now operates a small fleet of specialized vehicles capable of safely transporting fish hundreds of miles and a one-man helicopter is used for stocking approximately 70 alpine waters. These changes have reduced the manpower and expense required for stocking and increased survival of fish in transit compared to traditional stocking by horse or backpack.

What are the goals and objectives of the program?

As stated in the Strategic Plan, part of the WGFD mission is to “provide diverse, quality fisheries resources and angling opportunities. The goals and objectives of the fish hatchery program are dependent on biologically based stocking requests from the field.

How are the goals and objectives determined and evaluated, and at what frequency?

Production goals for species/strain, number, size, and dates for stocking are established two years in advance among fisheries managers, hatchery managers, and the fish culture administration. A number of extensive databases and Brood Stock Management Plans guide hatchery managers' decisions and provide transparency (years in advance) with respect to hatchery operations' goals and objectives. These goals and objectives are monitored throughout the year and established annually. Multi-year capital improvement requests and budgets are prepared and prioritized for agency and Commission decision-making. Annual reports are prepared and distributed for public information and review.

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

WMI was unable to identify efforts to increase revenue generated by the program outside of the annual resident and non-resident fishing license sales. Capital improvements have been possible by appropriations of state general funds, which have improved fish production and fish available for anglers. Currently, fish license sales generate about \$6.3 million annually (based on 2014 sales). The FY 2017 budgeted approximately \$7.5 million for fish hatcheries and rearing stations, fish spawning, and fish distribution. In an effort to enhance revenue, WGFD commissioned an analysis of sales and revenue forecasts for fishing and hunting permits by Southwick Associates in 2012 to predict sales and revenues as a result of license fee increases.

Due to the unique and technical nature of fish hatchery operations, WMI does not believe this program could be combined with others to increase efficiency.

Are there other options that provide the current level of services in a more efficient manner?

During the 132-year history of the WGFD fish hatchery program, WGFD has taken dramatic steps to improve the goal and objective setting process, fish production and survival, and stocking aspects associated with the program. WMI was impressed with the level of sophistication of the fish hatchery system and its on-going attempts to increase efficiencies across the entire system. Fish hatchery production and rearing is a highly technical profession that requires a unique expertise in engineering, husbandry, and science. By all indications, WGFD operates a highly efficient fish hatchery operation.

WGFD considered use of private hatcheries as a means to increase efficiency or capacity for fish production. However, production by private hatcheries is insufficient to meet the demands of fish production and quality. In addition, given the need for rigorous oversight of hatchery operations to insure the health of fish stocked into public waters, replacing state-run facilities with private hatcheries would impose significant risks to fisheries.

The adjacent states of Colorado, Nebraska, South Dakota, Montana, and Idaho all operate state run fish hatcheries. All but Nebraska has at least one federal fish hatchery within their borders. Wyoming's 10 state-run hatcheries compare to 17 in Colorado, 5 in Nebraska, 4 in South Dakota, 12 in Montana, and 19 in Idaho. Similar to Wyoming, these hatchery programs produce and stock coldwater fish species. Comparisons beyond the number of hatcheries and fish species produced are complicated by a number of factors including: state goals, individual hatchery goals, water quantity and quality, facility design, feed regimens, disease issues, and more.

WGFD does participate in the interstate transfer of warmwater fish species. Currently WGFD trades roughly 10 different fish species with the States of Arkansas, Oklahoma, Nebraska, Missouri, Kansas, South Dakota, and North Dakota. These fry and fingerling stocks are produced in those states and reared and or stocked directly into Wyoming waters. This program provides fish species that currently are not available through the WGFD fish hatchery system.

What are the wildlife, public, and economic benefits provided by this program?

Based on the *2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation Survey* conducted by the U.S. Fish and Wildlife Service and analysis conducted by Southwick Associates, almost 353,000 anglers spent \$476.8 million while fishing in Wyoming in 2010. Resident and non-resident license sales show a strong upward trend in interest in fishing in Wyoming. Anglers from across the nation travel to Wyoming for trout fishing experiences in incredible scenic landscapes. Many of those anglers rely on fish produced by the hatchery system for success.

Fish Hatchery Conclusions and Recommendations

- The WGFD fish hatchery system is a well-coordinated, integrated, state of the art production system.
- Hatchery staff expertise and dedication was apparent in our discussions and our review of advances made in the system through the years.

- Although the direct expense associated with operating the system exceeds license revenue, it is obvious that the return on this investment pays tremendous dividends to the state's economy, in particular, with its role in tourism and economic output.
- WMI recommends that WGFD retain its commitment to this program and continue to fund the technical advances that allowed the program to achieve efficiencies in production, rearing and distribution of fish to the waters of the state.
- In addition, WMI recommends that WGFD conduct human dimensions research and public surveys to measure support and demand for the program and public attitudes on regulatory action to manage waters across the State of Wyoming. This information will provide public satisfaction indices and may further refine statewide hatchery production and stocking schedules.

Elk Feedgrounds

When and why this program was originally established?

Prior to European settlement of the region, elk in western Wyoming migrated from summer range at higher elevations to areas in the foothills and plains where reduced snow depth and wind increased forage availability. As farms and ranches developed in these lower elevation areas, migrating elk damaged fences and competed for grass and hay stored for livestock. In addition, development of the town of Jackson, WY in the late 1800s created a partial barrier to elk movement, forcing thousands of elk to remain at higher elevation in the Jackson Hole area. These trends, combined with a severe winter in 1910-11 that led to a large die-off of elk, set the stage for establishment of elk feedgrounds.

In response to public demands for action to avoid future die-offs of elk, Congress first appropriated funds to feed elk in Wyoming in 1911. In 1912 Congress set aside the National Elk Refuge (NER) to provide habitat for the Jackson elk herd. The state began to establish additional feedgrounds in the 1920s and from then through the 1970s, a total of 22 state feedgrounds were established in strategic locations in western Wyoming.

The original purposes for establishing feedgrounds were: 1) to mitigate conflicts between elk and ranching – in particular elk feeding on stored hay – by “short stopping” migrations to lower elevations and 2) to sustain higher numbers of elk than could be supported in new wintering areas with deeper snow and colder

temperatures. Supplemental feeding was seen as providing dual benefits of reducing impact to livestock operations and maintaining higher elk numbers, which in turn increased elk hunting opportunity and, in the case of the NER, provided the opportunity for winter tourism associated with viewing large numbers of elk.

What substantive changes have occurred since that time?

Initially, all elk feeding was done using horse-drawn sleighs to distribute hay that had been stored the preceding summer. Most elk feedgrounds continue to operate using horse-drawn sleighs with feeders spreading hay by hand. Feeding has only been mechanized on three state feedgrounds that are accessible by maintained road during the winter. On the NER processed pellets have replaced hay as the primary feed.

One significant change that has occurred since the inception of feedgrounds is the documented frequency of exposure to brucellosis (*Brucella abortus*) in elk in the Greater Yellowstone region. Brucellosis is now endemic to both elk and bison in the region and is a major factor in elk management. Given the role elk feedgrounds play in maintaining brucellosis and how they affect the risk of transmission between elk and cattle, the question of whether or not feeding should continue is hotly debated.

Although the basic process of elk feeding remains unchanged from earlier years in most areas, WGFD has adopted a number of improvements over the years to increase the efficiency of the operation. In addition, WGFD altered the way in which feed is distributed to reduce the risk of transmission of brucellosis. Prior to 2010, WGFD spread hay in a typical “feedline” pattern that concentrated elk in a linear manner. Beginning in 2010 hay was distributed in a more-or-less random fashion across the feedground, resulting in greater dispersal of feeding elk and less contact between animals.⁷

One other noteworthy change in the operating environment for WGFD since inception of the elk feedgrounds is the discovery of chronic wasting disease (CWD) and potentially other wildlife diseases in deer and elk in Wyoming and several surrounding states. Although CWD has not yet been found in deer or elk within the herd unit areas with feedgrounds, the potential for CWD to surface in these areas is very real. In anticipation of the potential spread of CWD to feedground elk herd units, WGFD recently updated its CWD Management Plan⁸ to incorporate guidance

⁷ Wyoming Game and Fish Implements New Elk Feeding Strategy. WGFD News Release. April 25, 2010. Cheyenne, WY.

⁸ Wyoming Game and Fish Department Chronic Wasting Disease Management Plan. WGFD. January, 2016. Cheyenne, WY.

for feedground and herd management if CWD is identified in these areas. The Public Information section of the new plan provides a general description of actions WGFD will take to keep citizens informed about CWD. However, given the ongoing controversy surrounding feedgrounds and public sensitivity to CWD, WGFD should consider developing more specific outreach plans that could be implemented if CWD is found in a feedground herd unit. Given the typical public reaction when CWD is first documented in a deer or elk herd, WGFD should consider conducting human dimensions research to identify the potential impacts of reduced hunter interest in harvesting elk from herds where CWD occurs.

What are the goals and objectives of the program?

The initial goals of the feedgrounds program were to sustain higher elk numbers, increased hunting opportunity and to reduce elk depredation and damage on private property. When transmission of brucellosis from elk to cattle was documented in the Greater Yellowstone region, feedgrounds began to serve the additional purpose of providing spatial separation between elk and cattle to reduce the risk of disease transmission.

WGFD's FY 2017-21 Strategic Plan⁹ states that the current mission of the elk feedgrounds program is, "To maintain Commission population objectives and control elk distribution in an effort to minimize conflicts with human land uses." Thus the goals of the program are to continue to sustain elk numbers that support increased opportunities to hunt and view elk; to modify elk movements to reduce competition for forage; to reduce the risk of disease transmission; to reduce damage to private property; and to increase public safety on certain state highways.

The Commission has established numerical objectives for both total herd unit population sizes and the number of elk to be fed at each of the 22 state feedgrounds, referred to as the feedground quota.¹⁰ The overall quota for the 22 feedgrounds is to feed at least 14,934 elk each winter.

The USFWS and National Park Service established herd size and feedground objectives for the NER jointly in consultation with WGFD in the Final Bison and Elk

⁹ Wyoming Game and Fish Department Comprehensive Management System Strategic Plan FY17-21. WGFD. Cheyenne, WY. 38 pp.

¹⁰ Smith, S., et al. 2014 White Paper – Elk Feedground Efficiencies. WGFD. Cheyenne, WY. 16 pp.

Management Plan and Environmental Impact Statement for the NER.¹¹ For elk, the plan/EIS sets the objective at 5,000 elk, to be fed for 70 days.

In addition to these programmatic goals and quantitative objectives, WGFD expressed the goal of reducing the cost and increasing the efficiency of feedground operations through its “Target Feedground Program”.¹² Under this program both the manner and duration of feeding have been modified to improve the way the program meets the overall goals.¹³

How are the goals and objectives determined and evaluated, and at what frequency?

The Commission, based on recommendations from the WGFD, sets the goals and objectives for the feedgrounds program. The herd unit size and feedground quotas are intended to strike the appropriate balance between the desired outcomes of greater hunting opportunity (which calls for higher numbers) and reduced risk of disease transmission and conflict with other human land uses (which calls for lower numbers). WGFD recommendations are based on input from hunters and feedback from landowners as well as experience gained over the past century of elk feeding operations.

Herd size objectives and feedground quotas are based on “average” winter conditions,¹⁴ but conditions vary widely from year to year. In mild winters, fewer elk may congregate on feedgrounds (i.e. more elk may “winter out” in WGFD jargon) resulting in reduced feeding days. In contrast, in severe winters fewer elk may “winter out” forcing feeders to increase both the amount and duration of feeding. The unpredictable nature of winters adds a number of challenges to planning, budgeting and conduct of the feedgrounds program.¹⁵ In addition, the recovery of wolves in Wyoming has affected elk distribution resulting in fewer elk “wintering out” even in mild years in some areas with resulting increased impacts to the feedgrounds program (WGFD, pers. comm. during interviews).

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

¹¹ Final Bison and Elk Management Plan and Environmental Impact Statement for the National Elk Refuge/ Grand Teton National Park/ John D. Rockefeller, Jr., Memorial Parkway. U.S. Dept. of Interior.
<https://parkplanning.nps.gov/document.cfm?parkID=68&projectID=10748&documentID=17957>. Accessed 5/17/2016.

¹² Wyoming Game and Fish Implements New Elk Feeding Strategy. WGFD News Release. April 25, 2010. Cheyenne, WY.

¹³ Smith et al. 2014

¹⁴ Smith et al. 2014

¹⁵ Smith et al. 2014

The elk feedgrounds program generates revenue for WGFD by sustaining higher elk numbers than could be maintained without feeding. Presumably, elk numbers would need to be reduced unless private landowner tolerance for elk consumption of grass and hay on their property and the acceptance of risk of disease transmission increased significantly. The Commission and WGFD could increase revenue by increasing the elk herd unit population objectives and/or feedground quotas. However, increasing objectives and quotas would result in higher operating costs and potentially increased conflicts between elk and other human land uses. WMI did not determine whether the net result of higher objectives and quotas would be positive or negative from a revenue standpoint.

WGFD could reduce expenses associated with elk feedgrounds by reducing or eliminating feedgrounds. However, the cost savings would have counterbalancing negative impacts. For example, under Wyoming statutes, WGFD must compensate private landowners for forage consumed by elk. Such payments would likely increase significantly if elk were not fed at feedgrounds. To reduce compensation payments, WGFD could reduce elk numbers, but WGFD estimated that elk population objectives would have to be reduced by as much as 80% if feedgrounds were eliminated, given current levels of landowner tolerance for competition and disease risk. The net loss of revenue associated with that magnitude of reduction is estimated at close to \$2 million (WGFD, pers. comm. during interviews).

The current feedground program operates on an annual budget of \$2.8 million, 2 full-time-equivalent employees and a number of contact feeders.¹⁶ WGFD does generate approximately \$150,000 through an Elk Special Management Permit that is required to hunt in the herd units where feedgrounds occur, which partially offsets the feedground expense. It is unlikely that a program of this magnitude could be conducted by fewer full-time employees and the use of contracted feeders allows the WGFD to increase or decrease the number of active feeders during any given winter in response to the need at each feedground. Given the timing and location of feedground operations, WMI does not believe it is feasible to combine this program with others to increase efficiency. However, it may be possible for WGFD to increase production of hay on some of their WHMAs, which could reduce overall costs (pers. comm, WGFD staff during interviews).

Are there other options that provide the current level of services in a more efficient manner?

¹⁶ Wyoming Game and Fish Department Comprehensive Management System Strategic Plan FY17-21. WGFD. Cheyenne, WY. 38 pp.

WGFD conducted a comprehensive review of feedground operations in search of efficiencies in 2014.¹⁷ They identified several factors affecting program costs and efficiency including: 1) the unpredictable nature of winter severity; 2) the unstable nature of hay prices; 3) the inability to mechanize operations on many of the feedgrounds due to their remote locations with limited access and low temperatures during winter; 4) the decreasing availability and higher cost of small square bales which have to be used in non-mechanized operations; and 5) the limited ability to store hay as major factors affecting program costs and efficiency. They also found that WGFD had evaluated and/or taken a number of steps over the years to address costs, including liberalizing harvest to reduce elk numbers to objective levels, negotiating hay prices, formal bidding for hay purchases, using an index to set hay prices, changing feeder compensation from payment based on the amount fed to a fixed salary, reducing the amount of hay fed and duration of feeding operations, and increasing hay storage. Their primary recommendation to increase efficiency further was to enhance hay storage capacity, particularly at feedgrounds that are accessible by vehicle in winter, which would allow the WGFD to purchase larger quantities of hay when prices are lower and “bank” the hay for use when prices rise.

In response to these recommendations WGFD constructed a new hay shed at the Forest Park feedground in FY 14 and budgeted for two new sheds at the Dog Creek and Black Butte feedgrounds in FY 15. An insurance settlement is funding construction of new sheds at the Bench Corral, Horse Creek and Soda Lake feedgrounds in FY 16 and the FY 17 budget includes funding for new sheds at Camp Creek and Jewett feedgrounds (email R. Mackay to C. Smith 5/17/16). The new sheds are being constructed with metal roofs that will not only increase storage capacity but also reduce maintenance costs over the longer term.

What are the wildlife, public, and economic benefits provided by this program?

One of the primary benefits of the feedgrounds program is sustaining higher elk numbers than could be supported by the available habitat, given current levels of landowner tolerance for elk and risk of disease transmission. One benefit to wildlife from maintaining higher numbers of elk include a larger prey base for species that consume elk (e.g. wolves, bears and cougars) or scavenge on carcasses. Public benefits that derive from higher elk numbers include increased opportunity to hunt and view elk. The economic benefits of the program include increased license sales and hunter/viewer expenditures that result from maintaining higher elk numbers. In addition, for those individuals employed to feed elk, the feedgrounds program

¹⁷ Smith et al. 2014

provides a source of income in remote areas at a time of year when few other opportunities to earn money exist.

Another benefit of feedgrounds is altering elk movements and distribution in ways that reduce conflicts between elk and human land uses.¹⁸ Feedgrounds reduce elk depredation on forage on private land and stored hay, reduce elk damage to fences and reduce the risk of elk-vehicle collisions on some state highways.¹⁹ The feedground program also contributes to maintaining spatial separation between elk and cattle that reduces risk of transmission of brucellosis between elk and cattle. However, it must also be acknowledged that feedgrounds contribute to maintaining higher levels of brucellosis infection in the elk population.

It is difficult to calculate the economic value of the benefits of reducing conflicts, because one cannot quantify things that do not occur. There is no means to measure how much damage to fences does not occur or how many vehicle collisions are prevented due to feedgrounds. One way to quantify a portion of the economic value of feedgrounds to reducing conflicts would be to estimate the cost of depredation payments assuming elk consumed the same amount of forage on private lands that is currently fed on feedgrounds. WGFD feeds an average of 6,800 tons of hay per year.²⁰ Compensation payments to landowners for the same amount of forage lost would be substantial.

Similarly, it would be difficult to quantify the economic value of the degree to which feedgrounds reduce the risk of disease transmission. Neither the current degree of risk of transmission nor the extent to which the risk would change if feedgrounds were reduced or eliminated is known. Further, the elk-cattle-brucellosis issue represents a case where no matter how small the risk is, the economic impact of transmission are significant, at least to the producer whose herd is infected. Addressing this aspect of feedgrounds will remain problematic for both WGFD and the livestock industry as long as brucellosis is endemic in wildlife in the Greater Yellowstone ecosystem.

Another, indirect benefit of the feedgrounds is improved relations between WGFD and private landowners (WGFD pers. comm. during interviews). By taking steps to mitigate conflicts between elk and livestock operations, WGFD acknowledges the public's willingness to reduce the impact of wildlife on private property. In response, landowners may be more willing to accept some level of competition

¹⁸ Jones, J.D., et al. 2014. Supplemental feeding alters migration of a temperate ungulate. *Ecol. Appl.* 24(7): 1769-1779.

¹⁹ Smith et al. 2014

²⁰ Smith et al. 2014

between elk and livestock and to provide habitat for other wildlife species and public access to use and enjoy wildlife (see chapters on the Habitat and Public Access programs).

Comparison with surrounding states:

Although both Idaho and Colorado have provided supplemental feed for elk in a few areas under extraordinary conditions, none of the states surrounding Wyoming have established feedgrounds or use supplemental feeding on a routine basis. In fact, feeding elk is generally prohibited by statute in Montana and Colorado.

Although feeding elk is not prohibited by statute in Idaho, the Idaho Department of Agriculture has rules that prohibit the feeding of any big game in certain counties in eastern Idaho to prevent the spread of brucellosis (see <http://adminrules.idaho.gov/rules/current/02/0425.pdf>, accessed 5/17/2016).

Rather than using feedgrounds to sustain higher elk numbers, Colorado, Idaho, and Montana have adopted a management approach that sets herd size objectives at levels that can be sustained on available habitat and forage on both public and private lands, within limits of landowner tolerance. This does result in objectives that are lower, in some cases, than could be sustained with supplemental feeding, but avoids the myriad of issues and costs that accompany feedgrounds. In addition, all three states have active habitat acquisition and management programs working with private landowners to increase the biological and social carrying capacity for elk as well as elk hunting opportunities. These programs are similar to Wyoming's Statewide Wildlife Habitat Management and Habitat and Access Management programs (see Habitat program chapter).

Feedgrounds Conclusions and Recommendations:

WMI found that there is considerable controversy surrounding elk feedgrounds, based on different views regarding the appropriateness of supplemental feeding of wildlife and the role of feedgrounds in elk-cattle-brucellosis dynamics. Feedgrounds clearly contribute to the WGFD ability to achieve the goals and objectives for elk management set by the Commission and for managing the risk of disease transmission set by the Governor and legislature. Whether or not those goals and objectives are the right ones for Wyoming is not a question for WMI to address. Only the residents of Wyoming, through their own political processes, can determine what role feedgrounds should play. The balance of this section summarizes WMI's conclusions and recommendations in the context of the existing direction provided to the WGFD by the Commission, Governor and legislature.

- The feedground program is inherently expensive due to the remote locations and conditions under which elk feeding occurs.
- The program is efficient and well managed and WGFD has taken steps to identify and implement changes to increase efficiency in recent years. WGFD should continue efforts to develop storage facilities to support hay banking during times when prices are low.
- WGFD should also continue to explore ways to replace small square bales with less expensive large square or round bales wherever possible in feeding operations.
- WGFD has reduced both the amount of hay fed and the duration of feeding operations in recent years due to relatively milder winter conditions. To the degree these conditions reflect climate change on a larger scale the WGFD may be able to further reduce the average cost of feeding operations in coming decades.
- Regardless of long-term trends, severe winters will continue to occur periodically and the WGFD will have to be prepared to feed elk under those conditions unless the goals and objectives of the program are changed.
- Revenue generated through higher license sales made possible by maintaining greater elk numbers do not fully cover the costs of the program, but when the expense avoided by mitigating depredation on private lands and other economic impacts are factored in, not to mention the intangible benefits, the program appears to be relatively self-supporting.
- Feedgrounds play a complex role in the dynamics of brucellosis in elk and cattle. On the positive side, feedgrounds help to maintain spatial separation between elk and cattle. Conversely, feedgrounds contribute to higher levels of brucellosis exposure in elk. The tradeoffs between these positive and negative consequences are not well understood and controversy can be expected to continue in this area for some time. The WGFD's "Target Feedgrounds Program"²¹ and other efforts to modify the manner in which feeding occurs to reduce the seroprevalence of brucellosis in elk should continue, as should research to quantify the effects of these efforts.
- WGFD updated its CWD Management Plan in anticipation of finding this disease in feedground elk herd units. The public outreach aspects of that plan should be developed with additional detail. Human dimensions research could help WGFD identify the potential impacts of finding CWD in feedgrounds elk on hunters' continued interest in harvesting elk in these units. In addition, this research may provide WGFD with information about

²¹ Wyoming Game and Fish Implements New Elk Feeding Strategy. WGFD News Release. April 25, 2010. Cheyenne, WY.

the public's willingness to pay higher fees for the Elk Special Management Stamp.

- WGFD and the livestock industry should also continue efforts to quantify the risk of disease transmission both on feedgrounds and under other settings to inform future decision-making related to risk management.
- Finally, WGFD's habitat management programs, discussed in depth elsewhere in this report, can play an important role in reducing reliance on feedgrounds. Although feedgrounds will likely remain a necessary component of elk management in Wyoming unless herd size and hunting opportunity objectives are significantly reduced, efforts to increase winter habitat away from feedgrounds will not only support higher elk numbers without supplemental feed, by reducing concentrations of elk at feedgrounds, but may also reduce the prevalence of brucellosis in elk. The Commission and WGFD should continue to seek opportunities to work with willing landowners to expand and enhance elk winter habitat to offset the need for artificial feeding.

Bird Farms

When and why this program was originally established?

WGFD first established a bird farm in Sheridan in 1937. Around this time period, state fish and wildlife agencies across the nation were experimenting with the production and potential restoration of upland birds. Numerous states pursued the raising of pheasants and other non-native bird species to meet the demands and expectations of upland bird hunters. Although the successful establishment and restoration programs met with varying degrees of success, a number of states continue to stock pheasants and other species to provide recreational hunting opportunities.

WGFD experimented with the production and release of pheasants, chukars, gray partridge, francolins, turkeys, and Himalayan snowcock. Pheasant production and release has continued to date. In 1964, WGFD expanded its production facilities to the Downar Bird Farm near Yoder.

What substantive changes have occurred since that time?

Husbandry activities have improved through time with respect to genetic strains of pheasants used, feed type and techniques, and disease management. Facilities at both the Sheridan and Downar bird farms have been repaired and/or upgraded as funds permitted. WGFD has experimented with the number and timing of pheasant releases in an attempt to augment wild populations of pheasants. However, these attempts have not been sufficient, nor are the survival of pen-raised birds in the wild adequate, to restore or augment limited wild pheasant populations

What are the goals and objectives of the program?

The goal of the bird farm program is to produce the maximum amount of pheasants given the current capabilities of the 2 bird farms for stocking in specific locations across Wyoming. The annual production target is 40,000 hatchlings that would provide 30,000 pheasants for release and stocking. These goals are highly dependent on weather conditions at each of the facilities and disease management programs.

Upland bird hunting is cited as an important means to introduce hunters to the tradition and social aspects of hunting. Without pheasant stockings, this hunting opportunity would be severely limited. Other species of upland game birds in Wyoming provide hunting opportunities but pheasant hunting provides an excellent opportunity and ease of access to introduce youth and inexperienced hunters to upland bird hunting.

How are the goals and objectives determined and evaluated, and at what frequency?

The goals are established annually and depend on the facilities' history, capability, and funds available for staff, maintenance needs, and feed costs. Production is monitored throughout the year.

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

WGFD established a special pheasant management stamp required of hunters who pursue WGFD raised birds on public and private land. The current cost of the stamp is \$12 and has generated revenue amounting to about 9 percent of the bird farm total expenses of about \$768,000 (FY 2017 budget).

Like fish hatcheries, the facilities and expertise required to produce, raise, and release pheasants precludes its ability to be combined with other WGFD programs.

What are the wildlife, public, and economic benefits provided by this program?

Pheasant production and stocking provides hunting opportunities in selected locations that would not exist otherwise. In addition, pheasant stocking provides youth and older hunters with a relatively easy hunting opportunity that may improve hunting recruitment, retention, and reactivation efforts.

In 2014, there were 5,283 Pheasant Special Management Stamps sold generating about \$66,000. These licensed pheasant hunters comprise 20% of the total number of license buyers of the Game Bird/Small Game license type (26,000 licenses). While revenue generated for this license type was \$626,400.

Are there other options that provide the current level of services in a more efficient manner?

WGFD has analyzed a number of scenarios to determine if there are other means to provide pheasants for hunting opportunities. WGFD has considered and rejected the following options to maintain the bird farm program:

- conversion or replacement of current WGFD bird farm staff with contractual workers,
- purchase of day-old chicks from a private vendor rather than maintain a brood stock,
- purchase of adult pheasants to be held in WGFD facilities until stocking, and
- employing a private contractor to raise and stock pheasants.

Each of these scenarios has inherent expenses, risks, logistical, and administrative considerations. Private vendors set the market price that may fluctuate according to demand, production quality of birds may fluctuate, delivery expenses and mortality is out of the control of WGFD, and stocking expenses would still be borne by the WGFD.

Bird Farm Conclusions and Recommendations

- Past public surveys indicated a desire to maintain the bird farm and pheasant-stocking program. This hunting opportunity has been long associated with the introduction of first time hunters to the hunting experience. Without the propagation and stocking of pheasants, this form of hunting would largely decline or be non-existent in Wyoming.

- WMI determined that this program provides a benefit to hunters in the eastern part of Wyoming but provides marginal benefits or opportunities for hunters in the other regions of Wyoming. WGFD should continue to evaluate opportunities to enhance revenue through this program. The pheasant stamp generates less than 10% of the program expense. From a business perspective, this cost to benefit ratio is unsustainable. Strong public support for the program would indicate a willingness to pay more than the current fee to experience this one of a kind opportunity in Wyoming. This survey should include competing program benefits to assist in prioritizing program expenditures and allocation of resources.
- Although the program may be considered a “loss leader” for WGFD, WMI found no evidence that this claim is true. WMI recommends that WGFD conduct human dimensions research to examine this assumption and then determine the future fate of the bird farm program.

Employee Housing

When and why this program was originally established?

WGFD provided housing for game wardens beginning in 1937. Housing was originally provided to accommodate transfers of personnel and to serve the WGFD as a local office for issuing general public service/information regarding hunting, fishing, trapping and wildlife. They also provide services such as selling licenses, issuing game tags and beaver tags, registering harvests, receiving various documents, and storing equipment and wildlife-damage abatement materials.

At fish culture facilities, bird farms, and the research center, housing was built at the time each of the facilities was established and has been maintained then. There are 4 WGFD houses at the Research Center at Sybille, 4 at bird farms (2 each at 2 bird farms), 40 at 10 fish hatcheries and 51 warden stations.

Housing at hatcheries, bird farms and the research center provide different functions than game warden stations. Housing at these spots allow staff to oversee valuable (sometimes irreplaceable) live products that could need immediate husbandry attention at any time throughout the year. Power outages, pump failures, clogged screens, broken fences or pens, etc. all have potential to destroy fish stocks or allow escape of captive birds and mammals. In addition, employees living at these

sites serve as a deterrent to individuals who might vandalize, steal, or destroy these products.

What substantive changes have occurred since that time?

Providing employee housing originally facilitated the annual mandatory transfer of some wardens from district to district as WGFD and wildlife issues dictated. During the 1980s, due to the building resentment of the transfer policy, the WGFD discontinued the practice of mandatory transfers. The function of providing employee housing to serve as local WGFD offices remains much the same as when the program was initiated. Housing has been added at some locations as activities and staff were increased.

The adoption of housing policies, minimum standards for housing, and inspection policies are all relatively recent. The first housing policy was adopted by the Commission in 1998 and most recently revised in 2007.

Currently, WGFD responsibilities for the employee housing program include capital improvement of facilities, mortgage expenses, maintenance and repair (approximately \$300,000 - \$400,000 annually), property taxes, insurance, and moving expenses. WGFD budgets to replace 1 Game Warden station a year.

What are the goals and objectives of the program?

There are no specifically identified goals and objectives pertaining to WGFD housing, however, several general objectives for the program became apparent in our review. As mentioned above, game warden stations serve as local WGFD offices and housing at fish hatcheries, bird farms, and the research station provide the ability for staff to constantly monitor conditions of live fish, birds and mammals held at those locations.

Permanent WGFD housing for the convenience of the WGFD is defined as follows:

- That housing which allows public access to WGFD facilities and personnel outside of traditional office business hours;
- Situations, such as hatcheries, bird-farms, and research facilities, where protection of the wildlife resource requires on-site monitoring outside of traditional office business hours;
- Situations where it is necessary to store WGFD-owned property in combination with providing public access to our facilities; and
- Addressing the lack of affordable housing in Teton County.

How are the goals and objectives determined and evaluated, and at what frequency?

While there are not specific, quantifiable goals and objectives for this program, the level of public use at the warden stations was evaluated at least once. In 1999, a survey of wardens living at the stations was conducted. Among other things, the survey provided estimates of an average of 828 public visits and 1926 phone calls to each of the stations annually. At the March 2014 Commission meeting, these figures were cited, and the Department indicated they “believe that public use, particularly in small communities, has not changed drastically since that survey was conducted.”

Employees living in WGFD housing are required to sign housing agreements. Housing inspections are conducted when the employee moves in, moves out, and annually during residency. There is a comprehensive protocol and report format to conduct inspections.

Engineering firms conducted structural evaluations on hatchery housing in 2001 and warden stations in 2004, and those haven’t been repeated since that time. Engineers from a contracted firm handle structural, electrical, and mechanical concerns on a case-by-case basis if there is an issue at a particular structure.

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

The WGFD has considered charging rent for WGFD-provided lodging. A review by the Attorney General’s office determined that rent should not be charged, because it is a condition of employment that employees must live in the housing. There are legal opinions questioning the WGFD’s ability to require employees to live in a WGFD house as a condition of employment if they were required to pay rent. Since housing is provided for the convenience of the employer and as a condition of employment, it meets the criteria of the Internal Revenue Service code as nontaxable to the employee. Employees living in WGFD owned houses are not charged rent and do not pay housing operating costs.

The WGFD estimated in 2013 that \$14,325,960 would be the minimum annual cost to provide 24-hour personnel rotations at the warden stations, bird farms and the research center, if WGFD housing was eliminated. The well-distributed system of warden stations, which function as WGFD offices, saves substantial travel costs and employee time by not having to commute to a regional office to address certain work requirements.

Due to the unique and specialized functions of WGFD-provided housing, WMI does not believe this program could be combined with others to increase efficiency.

What are the wildlife, public, and economic benefits provided by this program?

The WGFD lists the following public services provided from warden stations:

- a. Sale of Special Management Stamps and Conservation Stamps,
- b. Notification of Game Damage/Request Claim Forms, accept completed damage claim affidavits
- c. Issuance of Resident Guide Permits
- d. Distribution and Processing of Landowner Coupon Redemption Forms
- e. Reporting/Registration of Black Bear, Mountain Lion and Bobcat kills
- f. Issuance of Temporary Disabled Hunter Permits
- g. Acceptance and Processing of Landowner License Applications
- h. Issuance of Interstate Game Tags
- i. Accepting reports of violations, injured/dead wildlife, nuisance wildlife, and human-wildlife conflict calls, etc.
- j. Accept/hold/care for injured wildlife
- k. Conduct Aquatic Nuisance Species and Hull Identification Numbers inspections on watercraft. Assist with watercraft titling and registration process and procedures.
- l. Issuance of Donation Coupons
- m. Permitting for possession of wildlife (Chapter 10 permits)
- n. Serves a location to store, process and donate edible wildlife to the public
- o. Public assistance with on-line license application process, including having individuals apply using the warden station computer.
- p. Storage and ease of accessibility of damage materials and equipment that is loaned to the public.
- q. Administration/facilitation of hunter safety classes/exams/materials
- r. Distribution of WGFD information from a live person. The public can interact with the warden rather than an automated phone system or computer/electronic device.

In addition to the public services noted above, the WGFD considers the storage of equipment, supplies, evidence, wildlife biological samples (disease, teeth, DNA), as well as a location for law enforcement interviews as essential functions of warden stations.

Are there other options that provide the current level of services in a more efficient manner?

Through the years the WGFD has analyzed options to improve the efficiency of employee housing. These options have included renting facilities and employee stipends. An economic and feasibility analysis has concluded that the annual maintenance expenses on these fixed assets, flexibility of employee reassignment, protection of WGFD vehicles and equipment, logistics of acquiring housing in remote areas, and service to the public preclude other options. The fact that other Departments in Wyoming State Government, provide similar employee housing opportunities reinforces the need for employer provide housing.

The WGFD estimated in 2013 that \$14,325,960 would be the minimum annual cost to provide 24-hour personnel rotations at the warden stations, bird farms, and the research center, if WGFD housing was eliminated. The well-distributed system of warden stations, which function as WGFD offices, saves substantial travel costs and employee time by not having to commute to a regional office to address certain work requirements.

According to information provided by the WGFD, in FY 2015, WGFD spent \$289,219 on maintenance, utilities and taxes for the warden stations at 51 locations distributed throughout the state. A total of \$824,825 was spent on ten regional offices and the headquarters building for the same categories during the same period. These offices are open 8-5 Monday through Friday, excluding holidays. The warden stations are open to the public on a 24-7-365 basis as long as the officer is there. Based on this information, it appears that the public enjoys greater access to WGFD staff, at more locations, at significantly lower cost with the warden station system.

Employee Housing Conclusions and Recommendations

- There are no specifically identified goals and objectives to pertaining to WGFD housing.

- The cost effectiveness, locations, and purpose of having WGFD housing has been evaluated at least 4 times since 1970, with the most recent being in 2013.
- Warden Stations are open to the public 24/7/365 if the officer is there.
- While there is a substantial difference in their intended function, Warden Stations provide increased opportunity for the public to interact with WGFD staff at convenient locations and at substantially lower annual cost than the regional offices.
- With one exception (Jackson Region), all senior/district game wardens are provided housing (warden stations), and living in the warden station is a requirement of the senior/district game warden position. Regional game wardens and access coordinators are not provided WGFD housing. Wyoming is the only state in the region that has this type of living arrangements for game wardens.
- The WGFD has identified numerous public services and agency functions that are delivered through the warden stations.
- There are on average 828 visits and 1,956 phone calls by landowners and sportsmen to each warden station annually.
- WGFD housing at fish hatcheries, bird farms and the research center provide for staff coverage at these facilities every day of the year.
- Other Wyoming agencies provide some housing for their staffs. Wyoming Department of Transportation provides 62 houses and Wyoming State Parks provides 35 houses. Both agencies cover the cost of utilities, and no rent is charged by either agency.
- WGFD should establish clear goals and objectives for the program.
- WGFD should assess program costs on an annual basis and report that information along with the public benefits and services provided by WGFD housing to the Commission.
- WGFD should establish a system to track the numbers of licenses, permits, stamps, tags, forms, applications, etc. that are issued through the warden stations each year to document the level of public use at these facilities.

Vehicle Fleet

When and why this program was originally established?

WMI found no references to the original establishment of this program. WGFD's Vehicle Use, Maintenance, Purchase, Disposal, and Record Keeping Policy states "To

meet its statutory and regulatory obligations, the Game and Fish Department maintains a statewide fleet of motor vehicles”.

What substantive changes have occurred since that time?

The State of Wyoming has detailed Vehicle Use Policies and Procedures that are incorporated in the WGFD’s Vehicle Use, Maintenance, Purchase, Disposal and Record Keeping Policy. These policies prohibit essential requirements that are essential for WGFD vehicle operation. There exists an agreement between the state Department of Administration & Information and the WGFD that allows exceptions to the state policy. These exceptions allow the WGFD to address its unique mission and objectives. There are also a number of WGFD policies/procedures related to fleet use (i.e. volunteers driving WGFD vehicles, ride-along policy, dogs/firearms in vehicles, driver training, commuting to work, decals, etc.). This review will concentrate primarily on the economics/efficiency of fleet management. WGFD has instituted a comprehensive vehicle fleet management system to provide extensive analysis and to make decisions of the appropriate time to trade and/or salvage vehicles. The system has been favorably compared to other Wyoming state agencies, as well as federal and state fish and wildlife agencies and appears to meet industry standards. This vehicle fleet management system includes the following monitoring and reporting elements:

- Number of vehicles/vehicle types.
- Location of vehicles
- Field assigned (1 employee per vehicle) and pool vehicles.
- Purchase expenses
- Maintenance and repair expenses
- Property taxes
- Insurance expenses
- Fleet management program
- Employee satisfaction survey

The general process for vehicle replacement is as follows:

- In November, reports are generated on each vehicle from the previous fiscal year and provided to Director's Office and each division administrator.

- Reports are reviewed, a list of vehicles slated for replacement/elimination is compiled, and that list is presented to the Director's Office for disposition in the upcoming fiscal year budget. The following items are considered:
 - Vehicles driven less than 5,000 miles and ATV/snow machines driven less than 150 hours are reviewed for elimination from the fleet.
 - Vehicles that are eligible for replacement based on the current vehicle replacement criteria schedule, as well as vehicles that are deemed unsafe or having extensive maintenance issues are noted.
 - Vehicles that could be reassigned to other employees or work units based on usage are identified.
 - Opportunities to reduce or modify the vehicle fleet are noted.
- Vehicle specifications are formulated for the vehicles identified for replacement.
- Funding is included in the annual WGFD budget to cover costs of new vehicles.
- Vehicles are bid, purchased, and traded in late fall to early spring.

What are the goals and objectives of the program?

The WGFD vehicle management system's goals are to provide long term, cost-effective and appropriately outfitted vehicles to meet the needs of WGFD employees with respect to work environment, daily job duties, and employee safety. These vehicles include: cars, sport utility vehicles, pick-up trucks, large trucks, snowmobiles, boats, trailers, and all-terrain vehicles.

How are the goals and objectives determined and evaluated, and at what frequency?

WGFD has established a vehicle fleet management plan that directs vehicle disposition on an annual basis. The following are the current WGFD vehicle replacement criteria:

- Tacoma Class and 1/2 Ton four wheel drive (4WD) pick-up trucks shall be replaced at a minimum of 95,000 miles or 9 years;
- Gas engine 3/4 Ton and 1 Ton 4WD pick-up trucks shall be replaced at a minimum of 85,000 miles or 8 years;
- Utility vehicles, sedans and two-wheel drive pick-up trucks shall be replaced at a minimum of 110,000 miles or 10 years;
- Diesel 4WD trucks shall be replaced at a minimum of 110,000 miles or 10 years;

- Class 8 fish haul trucks, large flatbed trucks, dump trucks, and tractor-trailers shall be replaced between 300,000 to 400,000 miles or 20 years of use;
- Class 6 or 7 fish haul trucks, flatbed trucks, and dump trucks shall be replaced at 250,000 to 300,000 miles or 15 years of use;
- Small farm tractors (less than 65 HP) shall be replaced at a minimum of 3,000 hours;
- Large farm tractors (65 HP and up) shall be replaced at a minimum of 6,000 hours;
- Backhoes/loaders/excavators shall be replaced at a minimum of 5,000 hours;
- ATVs shall be replaced at a minimum of 5,000 miles;
- Motorcycles shall be replaced at a minimum of 5,000 miles;
- Snow machines shall be replaced at a minimum of 3,500 miles.

A vehicle replacement selection table is included in the WGFD's Vehicle Use, Maintenance, Purchase, Disposal, and Record Keeping Policy. The projected uses for replacement vehicles drive decisions for the type of vehicle that will be purchased based on criteria in the table. For example, if the vehicle is going to be driven 30 days or more per year on unpaved roads or in severe driving conditions, a 4WD pick-up truck is specified; if the vehicle will be used to carry cargo exceeding 2,225 lbs. or to pull trailers exceeding 4,500 lbs. for 10 days or more per year, a ton truck is specified.

Car, truck, snow machine, trailer, boat, and ATV purchases conform to specifications provided by the WGFD's Fiscal Division, who also coordinates purchases. All vehicles are bid at the same time to take advantage of cost breaks and save on administrative time. The WGFD maintains a 30,000-mile per year travel cap on cars and trucks. Maintenance is to conform to guidance in vehicle owner's manuals. Vehicles with more than 2X cost/mile than their category average can be eliminated before mileage/ year criteria take effect. Vehicles that are deemed unsafe are also replaced early or eliminated from the fleet.

Using their vehicle records, the WGFD did an analysis in 2008 to determine the most cost effective mileage to replace trucks. That analysis indicated that replacement between 75,000 - 85,000 miles was optimal in terms of cost/mile. A subsequent analysis was done in 2012. This review resulted in increasing mileage criteria to 95,000 miles for 1/2 ton pick-ups (or 9 years) and 85,000 for 3/4 ton pick-ups (or 8 years). As a comparison, Idaho, in their 2014 Fleet Management Report, implemented a replacement target of 75,000 miles for their trucks.

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

The nature of this program does not lend itself to increasing revenue; however, WGFD continues to search for ways to decrease expenses.

What are the wildlife, public, and economic benefits provided by this program?

Fish and wildlife management and service to the public requires employees to conduct extensive field work involving law enforcement patrols, responding to public requests for assistance, aquatic and terrestrial biological surveys and research, travel to meetings, distribution of fish and game, habitat management, and a myriad of other activities that require employees to move from one location to another. In a state the size of Wyoming, extensive travel is required to serve the needs of fish, wildlife, and the public.

Using consideration of trade-in value along with identification of the point when maintenance costs begin to escalate to drive decisions on vehicle replacement is an effective and efficient approach. With the reduction of 53 cars, vans, utility vehicles, pick-ups, and heavy trucks between 2012 and 2015, application of the standardized vehicle replacement process looks to be effective in this area.

The WGFD is similar to other state wildlife agencies around the country with its vehicle fleet management process. A substantial fleet must be maintained to accomplish the agency mission, goals, and objectives and maintaining a substantial fleet is understandably an expensive undertaking

Are there other options that provide the current level of services in a more efficient manner?

The WGFD investigated leasing vehicles and determined not to take this approach because many of their vehicles require modifications such as holes drilled in dashboards or consoles for lights, radios and other electrical equipment. Holes are also drilled in frames and beds for headache racks, winches, grill guards, replacement heavy-duty bumpers, toolboxes, etc. Many vehicles have lift kits and larger diameter wheels put on them. Some of the vehicles are used for law enforcement, with specific duties that, in some cases, are forbidden by leases. They also have a number of vehicles that travel more than 25,000 miles in a year, which would exceed mileage caps with typical leases and cause substantial financial

penalties at the end of the lease. The WGFD has investigated extended warranties in the FY10 bid process and decided not to purchase them due to excessive costs.

Vehicle Fleet Conclusions and Recommendations

- The WGFD has a comprehensive and logical Vehicle Use, Maintenance, Purchase, Disposal, and Record Keeping Policy and has a systematic and objective approach for vehicle replacement.
- Vehicle fleet size has been reduced from 636 in 2012 to 583 in 2015 with most of the reductions occurring with 1/2 and 3/4 ton, 4WD pick-up trucks (38).
- During that same period (2012-2015), there has been a shift away from standard cab pick-ups to extended cabs. The average cost to upgrade from a 3/4 ton regular cab to a 3/4 ton extended cab was \$1,912 in FY15.
- Extended cab pick-ups have a higher trade in value than regular cab pickups, which often offsets the initial cost of purchasing the extended cabs.
- WMI reviewed the 2014 annual vehicle operating report for cars, vans, utility vehicles, pick-ups, and heavy trucks (388 total). Forty-five of the vehicles showed less than the 5,000-mile target for consideration for elimination from the fleet. Eighteen of those were identified as either being traded or purchased in 2014, so they were only driven for a portion of the year, leaving 27 retained for other reasons.
- Assessments of the best point to trade in vehicles were conducted in 2008 and 2012. Doing this type of analysis every four to five years is prudent and another assessment in the near future is recommended.
- With 27 cars, vans, utility vehicles, pick-ups, and heavy trucks being driven less than 5,000 miles, there is likely opportunity for additional fleet reduction in these categories. Continue the emphasis on reducing numbers of these vehicles.

Habitat Management

When and why this program was originally established?

Wildlife managers have recognized the fundamental importance of habitat quantity and quality since the dawn of scientific wildlife management²². For terrestrial

²² Leopold, A. 1933. Game Management. C. Scribner's Sons. 481 pp.

species, habitat includes the geophysical, vegetative, climatic, and ecological aspects of a given landscape. For aquatic species, the quantity and quality of water and biophysical structure of wetlands, lakes, streams and rivers are key components. Managers are acutely aware that without habitat there cannot be wildlife and that more and better quality habitat provides at least the potential for more abundant wildlife and greater opportunity to provide human benefits from wildlife. Accordingly, all state wildlife agencies include consideration of habitat in their management programs.

In spite of the importance of habitat to wildlife management, state wildlife agencies have limited authority to regulate land and water use or other factors that affect the quantity and quality of habitat. Title 23 of the Wyoming, Code which established the Commission and WGFD and defines their roles and responsibilities, only grants control over those lands for which the WGFD holds fee title or other interests such as a conservation easement. Wyoming water law allows the Commission or WGFD to file for instream flow rights to benefit aquatic systems, but the priority dates on those rights are relatively recent and junior to most others' rights. The importance of habitat and the Commission and WGFD's limited regulatory power related to habitat are powerful forces in shaping WGFD's habitat program.

WGFD's initial efforts related to habitat began in the mid-1940s with the purchase of land from willing sellers. The intent of these purchases was to provide both habitat for wildlife – particularly big game – and to provide publicly accessible areas for hunting and fishing. The WGFD's first habitat-oriented employee, hired in 1945, was responsible for construction of fences and other routine maintenance on WGFD-acquired lands. From that modest beginning, the Commission and WGFD have built a comprehensive and well-managed program designed to conserve and enhance both terrestrial and aquatic habitat for the benefit of all Wyoming's wildlife and citizens.

What substantive changes have occurred since that time?

WGFD's approach to habitat conservation and enhancement has grown steadily during the past 70 years. Personnel and responsibility for various habitat related work have been housed in several divisions as the organizational structure of the WGFD evolved over time. Staff and budgets have adapted to changing demands and opportunities. Changes include an increasing amount of WGFD owned or managed land, the need to restore habitats degraded by past land use practices, the opportunity to enhance habitat on private or public lands, and the acquisition of instream flow water rights.

On the terrestrial side, from its inception until the late 1980s, the WGFD's habitat program focused primarily on WGFD-owned lands, including Wildlife Habitat Management Areas (WHMAs) and Public Fishing Areas (PFAs). Habitat biologists on both central and regional staffs, engineers, and laborers concentrated on identifying appropriate lands to acquire; necessary on-the-ground actions to protect, restore, or enhance habitat conditions; and providing public access to these lands. WGFD staff also reviewed and commented on land use or development plans, as appropriate, to inform decision-makers about potential impacts on wildlife and ways to avoid, minimize, or mitigate impacts.

On the aquatic side, the Fisheries Division hired its first habitat-oriented biologist in 1970 to work on small-scale stream enhancements. Through the 1970s and early 1980s, the WGFD added staff to quantify instream flow needs for fisheries and expand efforts to address barriers to fish passage. When Wyoming Statutes 41-3-1001 to 41-3-1014 were adopted in 1986, the WGFD began filing its first instream flow rights to maintain aquatic habitats.

The Commission established the Wyoming Game and Fish Trust (WGFT) in 1986 to provide a dedicated source of funding for habitat conservation. The corpus of the trust, currently about \$105 million, is derived from donations and a portion of conservation stamp sales. Interest earnings ranging from \$500,000 to \$4.5 million per year are appropriated by the Commission to the WGFD to support habitat conservation.

Funding for habitat conservation was further enhanced in 2005 when the Wyoming Legislature established the Wyoming Wildlife and Natural Resources Trust (WWNRT). The WWNRT is an independent state agency, governed by a nine-member citizen board appointed by the Governor. A committee consisting of three House and three Senate members provides legislative oversight. The legislature initially appropriated \$15 million to the corpus of the trust in 2005 and added an additional \$25 million in 2006. The goal is to build the trust to a total of \$200 million through donations and future appropriations. In 2015 the corpus of the trust was approximately \$105 million and interest earnings, available for habitat conservation and other projects totaled about \$4.5 million. Although the WWNRT is independent of the Commission and WGFD, all three entities work closely together for mutual benefit.

Two significant inflection points are evident in the history of WGFD's habitat program. The first major evolutionary change occurred in 1989, with recognition of the need to take a broader approach to habitat conservation. That year the WGFD reorganized staffing and began looking beyond the boundaries of WGFD-owned

lands. Personnel assigned to the day-to-day management of WHMAs and PFAs continued to address the needs on those lands, but habitat biologists in both the Wildlife and Fisheries Divisions were tasked with reaching out to public and private landowners to build the partnerships necessary to affect habitat at a landscape scale. This signaled a major shift in the WGFD's habitat program, providing the potential to leverage the resources available to WGFD and protect and enhance habitat over a much larger area, with greater benefits for wildlife and people.

The second major advancement in WGFD's habitat program occurred just after the turn of the century, and was driven by the success of the WGFD's efforts to implement the broader approach to habitat conservation. When WGFD shifted from managing habitat on just its own lands to addressing habitat issues statewide, it became apparent that the agency could not do everything everywhere. Accordingly, the WGFD developed its first Strategic Habitat Plan (SHP) in 2001 to identify where the most important habitats were and to identify areas where habitats that had been degraded could be restored. The SHP also spelled out the mechanism by which the WGFD would evaluate different habitat projects, establish priorities, allocate resources, and monitor the outcomes. Importantly, the SHP was a WGFD-level guidance document. As such, it provided direction to staff in multiple divisions in both the central and field offices. This is important for ensuring a programmatic rather than divisional or fragmented approach.

The initial SHP was updated in 2009 and again in 2015²³. The purposes of the 2015 update were to:

1. Provide current guidance on prioritizing WGFD habitat actions and areas,
2. Identify habitat goals, objectives, strategies and actions for 2015-2020,
3. Identify how proposed habitat projects will be reviewed and ranked for funding from the Game Fish Wildlife Trust fund and other funding sources,
4. Clarify how the SHP relates to other planning efforts, and
5. Identify how various WGFD sections and personnel work together to accomplish habitat goals.

WMI's review of the SHP determined that each of these purposes is being met. The SHP provides clear guidance on how habitat actions will be prioritized by identifying Crucial Areas and Enhancement Areas and explaining the relationships between these two classifications. The plan lists explicit goals, objectives, strategies

²³ Wyoming Game and Fish Department Strategic Habitat Plan. 2015. Wyoming Game and Fish Department. Cheyenne, WY. 30 pp.

and actions in Appendix 1. The SHP documents the process by which all projects will be developed, reviewed and ranked. The process described is logical, transparent, and rationally objective, giving staff, partners and the public a clear understanding of the decision-making. The SHP explains how the goals of that plan build on, and integrate with other plans such as the Statewide Wildlife Action Plan (SWAP), the Sage Grouse Initiative (SGI), and the Wyoming Landscape Conservation Initiative (WLCI).

What are the goals and objectives of the program?

The overarching goals and objectives of the habitat program are spelled out in the [SHP](#):

1. Conserve and manage wildlife habitats that are crucial for maintaining terrestrial and aquatic wildlife populations for the present and future.
2. Enhance, improve and manage priority wildlife habitats that have been degraded.
3. Increase wildlife-based recreation through habitat enhancements that maintain or increase productivity of wildlife.
4. Increase public awareness of wildlife habitat issues and the critical connection between healthy habitat and abundant wildlife populations.
5. Promote collaborative habitat management efforts with the general public, conservation partners, private landowners and land management agencies.

These goals are clear, straightforward and comprehensive. They cover the scope of necessary actions from protecting crucial habitat to restoring habitat that has been damaged. They also address desired outcomes in terms of both public benefits and public awareness and provide direction to staff on how to pursue goals through collaboration.

The SHP identifies one or more objectives under each goal, several strategies for each objective, and multiple actions for each strategy²⁴ (Appendix 1). WMI's only criticism of the SHP is that not all the objectives are as quantitative or time-bound as they could be which would facilitate measurement of the degree to which the objectives are being accomplished. However, given the relatively high level and strategic purpose of the SHP, this is not a major concern. More specific, measurable

²⁴ WGFD Strategic Habitat Plan.

objectives are established in area-specific management plans and project proposals that flow from the SHP.

How are the goals and objectives determined and evaluated, and at what frequency?

The goals and objectives of the SHP are established by the Commission, based on recommendations of the WGFD. The goals are logical extensions of the legislative mandates to the Commission and WGFD to “provide an adequate and flexible system for control, propagation, management, protection, and regulation of all Wyoming Wildlife” (W.S. 23-1-103). The objectives reflect the next level of refinement, providing more specific guidance with respect to the desired outcomes under each goal. Both the goals and objectives are consistent with basic principles of wildlife management²⁵.

As mentioned above, the goals and objectives of the SHP originally established in 2001 were re-evaluated in 2009 and again in 2015. Five- to 10-year review cycles are typical and appropriate for planning at the level of the SHP. Importantly, WGFD gathers, analyzes and reports information on implementation of the SHP on an annual basis²⁶ (and see: <https://wgfd.wyo.gov/Habitat/Habitat-Plans/Strategic-Habitat-Plan-Annual-Reports> for annual reports from 2006 – 2014). This allows the Commission, WGFD and public to monitor progress toward the goals of the SHP on an ongoing basis.

What is done to explore increasing revenue generated by this program?

The habitat program does not generate revenue directly. Its contributions to WGFD revenue are indirect, but nonetheless, vital. For example, by maintaining productive habitat on 413,000 acres of WHMAs, the habitat program increases the abundance of game species, which in turn results in greater hunting opportunity and increased license sales/revenue. The same can be said for habitat conservation on private lands through conservation easements and other partnership arrangements. On the aquatic side, by maintaining instream flow and taking other measures to enhance aquatic habitat and avoid entrainment of fish in irrigation systems the aquatic habitat program provides more and better fishing, leading to more fishing license sales/revenue. Finally, habitat conservation that precludes listing of species under

²⁵ Silvy, N. J. (ed.) 2012. *The Wildlife Techniques Manual*, seventh ed. Johns Hopkins Univ. Press. 1136 pp.

²⁶ Strategic Habitat Plan Annual Report – 2014. Wyoming Game and Fish Department. Cheyenne, WY. 127 pp.

the Endangered Species Act may benefit not only the WGFD, but also the entire state economy financially by reducing legal or operating costs.

An alternative way to address the issue of revenue is to ask, “What is done to explore increasing the leverage of revenue that is allocated to the habitat program?” The short answer is that the habitat program is highly leveraged, resulting in significantly greater impact for each WGFD dollar invested. For example, in 2014 WGFD reported securing over \$1.6 million from 31 partner organizations to support habitat conservation projects²⁷. This represents \$1.72 contributed by partners for each \$1.00 of WGFD funds spent in 2014. In other years, partners have contributed as much as \$13.96 for every \$1.00 of WGFD funds²⁸. The ability of WGFD to attract this level of partner support demonstrates broad recognition of the benefits provided by the habitat program.

Can this program be combined with others to increase efficiency?

To a significant degree, the habitat program has already been combined with and integrated into other WGFD programs to maximize efficiency. Staff in the Director’s office as well as the Services, Fisheries and Wildlife Divisions has responsibilities related to the habitat program, all of which derive guidance from the SHP. WMI found that throughout the past 70 years WGFD has continually adapted the roles and responsibilities of staff involved with the habitat program to maximize efficiency.

Most recently, in 2014, WGFD restructured the Terrestrial Habitat Section by combining the Habitat and Biological Services Sections into a single Statewide Wildlife and Habitat Management Section, eliminating three Habitat Extension Biologists positions working in Natural Resource Conservation Service offices and transferring those employees into vacant Terrestrial Habitat Biologist positions, and making a number of other personnel shifts to reduce costs²⁹. WMI did not identify any additional realignment opportunities that would increase efficiency.

The partnerships and leveraged funding discussed above is also evidence of how WGFD has combined its habitat program with others to increase efficiency. By working collaboratively with 30 or more other organizations each year, WGFD is

²⁷ Strategic Habitat Plan Annual Report – 2014.

²⁸ 2009 Annual Report – Strategic Habitat Plan Accomplishments. Wyoming Game and Fish Department. Cheyenne, WY. 118 pp.

²⁹ Strategic Habitat Plan Annual Report – 2014.

able to significantly increase both the cost-effectiveness and efficiency of its habitat program.

What are the wildlife, public, and economic benefits provided by this program?

By protecting, maintaining, and enhancing terrestrial and aquatic habitat, WGFD provides a broad range of benefits to wildlife, people and the economy. Wildlife populations are both more abundant and secure as a result of habitat projects. The increased abundance provides more opportunities for the public to enjoy wildlife in a variety of ways, including hunting, fishing, trapping, and viewing.

Economic benefits flow from habitat projects and greater abundance of wildlife as well. Habitat management projects often employ contractors. Acquisition of property rights, such as conservation easements, provides revenue to landowners. These revenues can be important for keeping working lands intact, ranching families on the land, and mitigating the impact of inheritance taxes. Habitat projects, such as implementation of grazing systems to benefit wildlife, also pay dividends to landowners whose livestock share the area through increased productivity. More abundant wildlife results in more licenses being sold and longer hunting seasons, which increases economic activity in communities and areas used by hunters. Hotels, restaurants, and gas stations all benefit from more hunter-days afield due to the habitat program.

Finally, the habitat program provides benefits across broad sectors of the economy by avoiding expenses. For example, habitat conservation efforts for sage grouse³⁰ were instrumental in the decision by the FWS that the species did not warrant listing as a threatened or endangered species. Had WGFD not shown the leadership it did in conserving sage grouse habitat, and the species may very well have been listed. The economic impacts of listing would have been widespread and significant, including further restrictions on energy development and transmission as well as livestock grazing, two essential drivers of the economy of Wyoming.

Are there other options that provide the current level of services in a more efficient manner?

WMI did not identify any additional options that would provide similar habitat conservation benefits in a more efficient manner. The history of the habitat program

³⁰ Wyoming Greater Sage-Grouse Conservation Plan. 2004. Wyoming Game and Fish Department. Cheyenne, WY. 98 pp.

demonstrates that WGFD is constantly molding staff and responsibilities to maximize efficiency and effectiveness of the program.

In response to questioning by WMI, WGFD staff reported that a 10% reduction in funding for habitat programs would result in decreasing or eliminating the fish passage grant program and other elements of the program that offer funds to partners, including private landowners (pers. comm. WGFD staff during interviews).

Identify projects done by WGFD alone, in partnership with other entities, or by other entities not in partnership with WGFD that do not benefit wildlife or the hunting, trapping or fishing public.

WMI could not identify any projects implemented by WGFD alone or with partners that did not benefit wildlife. The guidelines in the SHP, along with the project ranking criteria specified in the SHP and used to prioritize projects assure that all habitat projects implemented by WGFD provide benefits to wildlife.

WMI did identify projects that were not specifically targeted at species pursued by hunters, anglers or trappers. For example, the North Platte River Backwater Habitat project completed in 2009 was intended to enhance habitat for 16 native, non-game fish species. Other projects designed to protect or enhance habitat for species identified in Wyoming's SWAP typically focused on nongame species. It is important to recognize, however, that habitat projects designed to benefit nongame species will have both direct and indirect benefits for game species in the same way that habitat projects designed to benefit game species benefit nongame. Further, given WGFD's legislative mandate to "provide an adequate and flexible system for control, propagation, management, protection, and regulation of *all* Wyoming Wildlife" (W.S. 23-1-103, emphasis added), it is appropriate that some habitat projects address the needs of nongame species. The State Wildlife Grants Program, under which WGFD receives \$500 – 600,000 in federal matching funds per year includes funding for habitat conservation for "species of greatest conservation need," most of which are nongame. Many of the partner dollars contributed to the habitat program come from sources whose interests are broader than just hunting, fishing or trapping.

The surrounding states of Idaho, Montana and Colorado all have habitat programs that are similar in structure and function to WGFD. Funding sources and staff levels vary among the states and Wyoming falls within the range of the other states. Importantly, Wyoming's SHP provides more comprehensive and integrated guidance for habitat conservation than planning documents or systems in the other states, which continue to rely on intra-divisional coordination. In contrast, Wyoming's SHP takes a holistic, programmatic approach.

Habitat Management Conclusions and Recommendations

- WGFD's habitat management program is well designed and managed to focus efforts on the most important habitats in need of conservation or restoration. The SHP provides excellent, programmatic guidance and is reviewed and updated on a regular and appropriate schedule. The process used to identify, select, fund and monitor habitat projects is thoroughly documented, objective and transparent. WGFD habitat dollars are heavily leveraged with partner and private funds, which greatly increases the impact of the program. The return on investment in habitat projects is substantially positive, both in terms of direct revenue to WGFD and benefits to the overall state economy.
- WGFD's habitat program should continue to operate basically as it does currently, taking advantage of partnerships to leverage WGFD resources in pursuit of the goals and objectives outlined in the SHP. In future iterations of the plan WGFD should strive to increase the degree to which objectives in the SHP are quantitative and time bounded to facilitate even better assessment of program accomplishments.

Access for Hunting and Fishing

When and why this program was originally established?

The current Habitat and Access Branch (HAB) within the WGFD, originated around 1945. At that time, the primary activity included coordination and construction of fencing on newly acquired lands. Through time the activity evolved to include construction and maintenance of other WGFD facilities such as Wildlife Habitat Management Areas and Public Fishing Areas. Engineering and construction became the primary roles of this group. Staffing and funding were variable for the first few decades of its existence.

What substantive changes have occurred since that time?

In the 1980's, after several reorganizations and addition of a few staff, the HAB became more professional and the group focused on large construction projects and aquatic development projects including stream improvement and bank stabilization projects. In the mid-1980s following the influx of federal funds through the passage of the Wallop-Breaux Act, the branch underwent addition reorganization and expanded its activities to include major road upgrades, concrete boat ramps,

outhouse construction, parking area development and constructing signs on WGFD property to assist hunter and angler access. In the late 1980s, efforts were concentrated on statewide habitat management and some staff were reclassified as habitat biologists.

In 2002, WGFD developed the first Strategic Habitat Plan. This effort advanced the management of wildlife habitat on a statewide basis and addressed the fragmentation of WGFD-managed lands. The current HAB consists of a branch chief, regional supervisors, 3 coordinators and 12 biologists. The HAB is responsible for the administration and management of 194 Public Access Areas, 37 Wildlife Habitat Management Areas, and 22 elk feedgrounds. These areas total almost 450,000 acres of fee title and administered federal, state, and private lands. Aquatic responsibilities include the management of approximately 370 miles of stream and river access and 48,000 surface acres of lakes and reservoirs around the state. HAB staff primarily focus their efforts on WGFD's property; however, they coordinate with and provide assistance to other divisions within the WGFD.

The AccessYES (formerly the Private Lands/Public Wildlife) program was established by WGFD in 1998. During the 1990's, numerous state fish and wildlife agencies instituted programs to provide hunting and fishing access to private lands on a voluntary and compensated basis. These programs have provided millions of acres of private land access to complement available public land access. The AccessYES program increased from about 27,000 acres at its inception and has grown to more than 650,000 acres, 220 lake acres, and 70 stream miles for fishing access in 2 years. Currently, the AccessYES program provides access to about 1,770,000 acres of enrolled private land and state lands and has provide access to about 185,600 acres that would otherwise be inaccessible without the AccessYES program. This growth attests to the popularity of the program among landowners, hunters, and anglers. In addition, The Hunter Management Area program has focused hunting activity (more than 24,000 permission slips to more than 15,000 hunters) on private lands to provide access and address landowner concerns about crop and livestock damage.

What are the goals and objectives of the program?

Goals and objectives for the HAB are identified in annual work plans that are developed at the local and regional level and are rolled up into statewide priorities. The Strategic Habitat Plan (SHP) is updated on 5-year time periods and includes overarching goals, objectives, strategies and actions for terrestrial and aquatic habitat management. The SHP is a well-written and documented plan that defines

and prioritizes the management of crucial areas and enhancement areas. Crucial Habitat Areas are based on significant biological and ecological values necessary to support life stages of game species, sensitive native non-game species, unique species assemblages and ecologically important species or communities.

Enhancement Habitat Areas are areas that should be actively enhanced by WGFD and its partners. These areas focus on habitat issues such as: habitat fragmentation, invasive species, loss of connectivity, development impacts, degraded habitat, etc.

The functions and performance measures of the access program is detailed in the WGFD's strategic plan. In general, the goals consist of protecting Commission property rights, monitoring recreational opportunity, landowner relations, and maintenance of infrastructure, including:

- Fences
- Roads (cattle guards, bridges, culverts)
- Parking areas
- Signing
- Public Facilities
- Boat ramps
- Docks
- Wetlands and delivery systems
- Irrigation Fields and delivery system
- Water Developments maintenance

How are the goals and objectives determined and evaluated, and at what frequency?

Goals and objectives are determined internally with WGFD with public input and are reviewed for performance annually. Public access to private lands, because of its opportunistic nature, is maximized depending on staffing levels and funds available for landowner payment. Demand for the AccessYES program exceeded available funds most years.

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

Funding for public access programs are provided by license funds and the Access Yes Program (AYP). License funds pay for personnel and daily operations. AYP funds are generated by the sale of lifetime and annual conservation stamps, donations from organizations and individuals, restitution funds from court-imposed

finer, and interest. In 2014, those funds totaled more than \$960,000, an increase over the previous year.

What are the wildlife, public, and economic benefits provided by this program?

Access to lands for outdoor recreation, including hunting and fishing, is a primary responsibility of every state fish and wildlife agency in the nation. Wyoming's incredible natural landscapes and its abundant fish and wildlife demand an active public access program. The combination of WGFD Wildlife Habitat Management Areas, Float Access Areas, Public Access Areas, Walk-In Hunting, and Hunter Management Areas are designed to provide the public with access to fish and wildlife resources on public and private lands. In addition, the access provided to those lands allow wildlife managers to regulate population levels of wildlife (e.g., big game) that may cause economic damage to private landowner crops. The Hunter/Landowner Assistance Program provides a service that allows hunters and landowners to meet. Hunters are interested in access to lands and landowners are interested in regulating big game populations. This program does not provide landowners with a monetary incentive but it does provide them with access to hunters to help with population control on their lands.

Private landowners who voluntarily choose to enroll their lands into the Walk-In and Walk-In Fishing Access program are provided with a payment that provides an economic benefit for landowners who share their lands with sportsmen and women. WGFD has developed a formal pay rate schedule that has evolved through time, to entice landowners to join the program. These private lands are particularly important because they often encompass the most productive wildlife habitat.

Are there other options that provide the current level of services in a more efficient manner?

The WGFD has explored numerous options and currently incorporates the following elements in its comprehensive public access program:

- Wildlife Habitat Management Areas
- Walk-In Hunting Areas
- Walk-In Fishing Areas
- Float Access Areas
- Public Access Areas
- Hunter Management Areas
- Hunter/Landowner Assistance Program

Each of these programs has been customized through time for hunter and landowner acceptance in Wyoming. WGFD employees have developed an efficient delivery mechanism and continue to look for improvement of efficiencies.

Access for Hunting and Fishing Conclusions and Recommendations

- WGFD has established a multi-faceted public access program that has evolved and has been customized to the needs and desires of Wyoming hunters and landowners.
- The WGFD access program is similar in nature to programs in surrounding states.
- Enrollment in the voluntary, private landowner access programs has continued to grow through time and is a testament to the ability of WGFD to be responsive to landowner needs and hunter expectations.
- WGFD and the Commission have to determine the magnitude of the AccessYES program in terms of acreage per region and funding necessary to meet demands from landowners and hunters.
- Land acquisition, easements, leases, etc. for public access is an admirable and insatiable desire for public access. Strategic public access goals should be established and communicated to the public.
- Scientific public surveys may provide information that will guide decision-makers about the appropriate size and scope of the AccessYES program on a regional and statewide basis. Otherwise, AccessYES staff will be operating with the best of intentions but without the benefit of public guidance.

Recruitment, Retention and Reactivation of Hunters and Anglers

When and why this program was originally established?

Like most state fish and wildlife agencies, the WGFD laid the foundation for recruitment, retention, and reactivation (R3) efforts with the establishment of a state-administered hunter education program (legally required in WY since 1962). Though hunter education is not generally considered to be an R3 program (i.e., the program was not designed to produce more hunters, it was designed to certify individuals already committed to hunting), most early R3 efforts were implemented through state hunter education staff and volunteers. Since that time, the WGFD has developed and managed dozens of programs that were created to support hunting

and angling, the majority of which were managed by the agency's Hunter Education and Conservation Education Programs.

Unfortunately, prior to 2013, the R3 efforts undertaken by the WGFD were largely developed without an understanding of the particular threats that were facing the state's populations of outdoor recreationists. Even though hunting license sales have experienced modest increases in the last decade and fishing license sales have remained relatively stable, national trends in hunter and angler participation indicate a reduction in the number of hunters and anglers. WGFD recognized those facts and took steps to increase hunter and angler participation. However, most of these efforts did not target (or mis-targeted) the barriers to outdoor participation that may have been influencing various demographics of the state's changing public. This lack of strategic focus in R3 programming is not unique to Wyoming. As documented by a national census of state fish and wildlife agency and conservation NGO hunting and shooting sports R3 efforts in 2009³¹, over 85% of R3 efforts were designed and implemented without any prior needs assessment (specific to a participant demographics), measurable goals and objectives, or outcome-based assessment to determine the ultimate effectiveness of the effort in creating new participants or increasing participant avidity. This "shotgun" approach to R3 has been documented to be highly ineffective in reducing the national 30-year decline in hunting and angling.

This is not to say that the WGFD has not invested significant resources (staff, budget, and equipment) into sustaining the tradition of hunting and angling in the state of Wyoming. According to an internal census of agency R3 efforts³², WGFD staff identified over 15 R3 effort-types that were being implemented annually through the Conservation Education program. Many of these effort-types include numerous individual events or programs. This is similar to other states, which, according to surveys conducted by the Council to Advance Hunting and Shooting Sports (CAHSS), collectively spend nearly \$25 million dollars on R3 efforts annually.

What substantive changes have occurred since that time?

While many state fish and wildlife agencies are rapidly working to increase their internal capacity to conduct effective, coordinated, and targeted R3 efforts (largely in response to national R3 strategic initiatives), the WGFD ranks as one of only a

³¹ Wildlife Management Institute. "Recruitment and Retention Assessment Survey Report." huntingheritage.org. Web. 20 March 2009.

³² WGFD Creative Process Team. "Core Group Synopsis." 2013. TS. WGFD electronic record.

handful of other state agencies who have been leaders within national efforts to improve R3 strategy and implementation. Since 2012, the WGFD has allowed their R3 coordinator to participate in numerous national R3 planning teams that have produced a variety of tools and resources aimed at helping state fish and wildlife agencies increase public participation in hunting, angling, and the shooting sports. Additionally, WGFD R3 staff have served as members of an elite team of instructors who delivered cutting-edge R3 strategic planning training at national and regional state and federal agency R3 workshops.

Resulting from the WGFD's involvement in these efforts has been the creation of one of the best examples of a hunting R3 program in the nation. The Forever Wild Families (FWF) program has become a national standard of R3 program excellence according to chairs of regional Association of Fish and Wildlife Agencies Hunting and Shooting Sports Participation Committees, CAHSS, and numerous individual state fish and wildlife agencies. The program incorporates all of the elements of an effective R3 initiative as outlined in the Nation Hunting and Shooting Sports Action Plan³³.

In addition to the development and piloting of the FWF program, WGFD R3 staff undertook one of the nation's first intra-agency planning efforts to identify and sort agency education programs into strategic areas of focus by developing an outcome-based approach that effectively separated R3 programs from conservation education programs. During the spring and summer of 2013, WGFD hosted three internal workshops (Creative Process Trainings) where state and regional conservation education, R3, and hunter education staff produced an inventory of education efforts within the WGFD and categorized them according to their desired outcomes. Thus, for the first time, WGFD conservation education and hunter education staff had a prioritized framework to begin identifying how effective R3 and other education efforts were in producing their desired outcomes³⁴. Since then, numerous other state agencies (NE, FL, GA, AZ, WI, MI) have followed this process to either improve the efficiency of their R3 efforts (including reducing program redundancy) or lay the foundation for a statewide R3 strategic plan.

As part of the above strategic focus process, WGFD produced its first hunter and angler license purchase trend report using data from the WGFD electronic license service system. This report proved critical to WGFD R3 staff as it documented much

³³ Council to Advance Hunting and the Shooting Sports, Wildlife Management Institute. "*National Hunting and Shooting Sports Action Plan*." nationalR3plan.org. Web. June 2016.

³⁴ Wyoming Game and Fish Department. "WGFD Hunter Adoption Model." 2013. TS. WGFD electronic record.

lower hunter and angler participation rates than were previously estimated, and revealed purchase (and thus participation) patterns throughout Wyoming that were previously not understood. As with the above mentioned leadership in R3 strategic focus, the WY license trend report was widely circulated within other state fish and wildlife agencies as an example of how they should improve their data reporting and subsequent R3 program design and implementation.

It is important to note that the databases where license purchase data are housed within the WGFD have also been recently re-organized to allow the tracking of individual customers through time. Thus, the WGFD now has the ability to track an individual from a point prior to their first license purchase (following the issuance of an Sportsman's ID) through all years in the future where that individual purchases a license. This functionality is not common within state fish and wildlife agencies and is another example how the WGFD is well positioned to efficiently evaluate the effectiveness of its current and future R3 efforts. For many states, collecting license trend information typically requires the costly assistance of contract specialists.

Unfortunately, the tools and resources of the WGFD national R3 leadership, strategic focusing, and customer tracking systems have not been widely implemented since their completion. Significant budget cuts to the Conservation Education Program in 2014 resulted in a constriction of the program's ability to continue innovating R3 implementation in the state.

Additionally, the WGFD R3 Coordinator, Conservation Education Coordinator, and Multimedia Specialist have all left the agency within the past two years, and hiring freezes have thus far halted the filling of these positions.

What are the goals and objectives of the program?

During the 2013 intra-agency planning efforts to identify and sort agency education programs into strategic areas of focus, WGFD staff categorized the types of efforts they conducted through the Conservation Education program according to the type of public participant each effort-type was trying to produce. Efforts could be classified as R3 only if they resulted in an "Active License Buyer (someone who purchases a license for the first time, or someone who increased their license purchases as an exclusive result of the R3 effort)." All other efforts within the Conservation Education program were generally considered to create "Active Stakeholders (these are programs that educate, advocate, or inform the public about wildlife in WY or the activities of the WGFD)."

In order to set specific measurable objectives for the R3 efforts being conducted within WGFD, R3 staff used the Hunter Adoption Model³⁵ to map the influence of each program on the process an individual undergoes to become a hunter or angler. The resulting map³⁶ showed that the FWF program was one of the only R3 programs being conducted in Wyoming that was structured with measurable goals and objectives. All other programs either had no stated goals or objectives, or had objectives that were too general to be measured for program effectiveness.

How are the goals and objectives determined and evaluated, and at what frequency?

As an agency, the WGFD has not formally adopted a set of goals and objectives for its overall R3 efforts. According WGFD to staff, this was an original intended outcome of the 2013 strategic focus planning, but the subsequent loss of staff and budget halted progress to that end.

Within the host of individual WGFD R3 programs, very little (if any) formative evaluation has been conducted³⁷. The exception is the FWF program that has set a national standard in how well-designed R3 programs can demonstrate their effectiveness. Measurable goals and objectives were determined through the drafting of a logic model results chain, and program evaluation methods and timing were developed to specifically measure those objectives. FWF participants are extensively surveyed to determine the impact of the program on their behaviors and attitudes in the short and long term; participants are selected through a pre-survey to determine their eligibility, given an immediate post-program survey, and finally asked to complete a long-term survey to determine their behavior change as a result of the program following the next hunting season.

What is done to explore increasing revenue generated by this program?

According to current R3 best practices documented in a wide variety of sources (National Hunting and Shooting Action Plan, Association of Fish and Wildlife Agencies Hunting and Shooting Sports Participation Committee, National Shooting Sports Foundation, Recreational Boating and Fishing Foundation), the purpose of

³⁵ Wildlife Management Institute. "Hunter Adoption Model." nationalR3plan.org. 2012.

³⁶ Wyoming Game and Fish Department. "WGFD Hunter Adoption Model." 2013. TS. WGFD electronic record.

³⁷ WGFD Creative Process Team. "Core Group Synopsis." 2013. TS. WGFD electronic record.

any hunting or angling R3 program is to create a new participant or increase the participation of an existing hunter or angler as a result of the program. In the vast majority of cases, these outcomes result in increased license revenue.

Thus, R3 programs that are highly successful in the above outcomes will produce greater revenue for the agency in the long term than those programs that cater to participants who are already avid hunters or anglers. In addition, R3 programs that host children of avid hunters and anglers are likely to produce very little income for the agency as these children generally have the social support and skills training opportunities needed to convert them to hunters or anglers.

It appears that many of the WGF D R3 programs have catered to existing hunters or anglers or their children. This was noted in the 2013 strategic focus planning workshops when WGF D conservation education staff were inventorying the agencies' efforts. According to interviews with Conservation Education staff, there was and still remains a desire within the WGF D leadership to deliver R3 programs that "just seem like the right thing to do" without first determining if the program will actually address a barrier to new or increased participation. This attitude has been noted in many other states where R3 programs have been developed at the suggestion of an individual and not as the result of a needs assessment. Current R3 best practices strongly discourage this type of program creation.

Can this program be combined with others to increase efficiency?

Partnership on R3 efforts is critical to the successful implementation of a state fish and wildlife agency's R3 goals. This has been documented in the National Hunting and Shooting Sports Action Plan:

"In order to achieve success in R3 initiatives at local and national levels, organizations must increase their capacity and implement targeted strategies aligned with their R3 goals. The focus on R3 must shift from a shotgun approach of actions, to one that targets outcomes. This means doing things differently, not necessarily doing more things. It is difficult, if not impossible, for a single organization to offer all the R3 events, programs, or campaigns needed to address the variety of potential hunting and shooting sports participants. However, it is important to recognize that each stakeholder presents unique expertise and resources capable of providing effective opportunities that engage participants along various portions of the recruitment pathway. By building capacity in a parallel approach, agencies, conservation NGOs, and industry can combine expertise and

resources to connect potential participants to multiple opportunities and move them through the necessary stages needed to become lifelong participants.”

The role and responsibility of creating new hunters and anglers should not rest solely with a state fish and wildlife agency. Creating new participants is a long, expensive, and frequently complicated process. Agencies are likely best positioned to coordinate state-wide R3 efforts by leveraging the resources of state and national stakeholders through a partner working group. Arizona, Michigan, Florida, and Georgia have all formed external partner groups and are coordinating their efforts with those of the agency to increase the effectiveness of each program while reducing its cost to any one organization.

The FWF program has begun this type of partnering with its Camo Cashe program. Through this effort, multiple sportsman and conservation groups have partnered to provide free gear to program participants. There are likely other opportunities for additional partnerships with this and other WGFD R3 programs that can serve to reduce overall program cost while increasing effectiveness.

It should be noted that for all its success, the FWF is an expensive program to conduct. This is not unique to R3 programs that are designed to create new participants. Many other state fish and wildlife agencies have struggled with the high costs of making a hunter or angler. From interviews with R3 staff in other states as well as an increasing body of case studies, partnership with external stakeholders appears to be the key in reducing costs for agency R3 programs. In many cases, state agencies have developed an effective R3 effort, piloted it in a small region, and then utilized local and national stakeholders to deliver and scale up the effort to new areas.

The WGFD Hunter Adoption Model developed in 2013 provides a visual gap analysis of where R3 programs in WY may be linked to other partner efforts in order to produce increased hunting and angling participation.

What are the wildlife, public, and economic benefits provided by this program?

Hunters, anglers, and trapper account for nearly 75% of the WGFD's annual budget income (license revenue combined with federal tax revenue from the sale of ammunition and hunting and fishing equipment).

Hunters and anglers combined spend nearly \$750 million on travel and gear in Wyoming each year. According to economic data from the National Shooting Sports

Foundation and the Association of Fish and Wildlife Agencies³⁸, in Wyoming, hunters alone generate:

- \$301,218,745 in retail sales
- \$151,501,066 in salaries and wages
- \$24,254,951 in local and state taxes
- \$35,476,413 in federal taxes

The economic significance of hunting and angling to the WGFD and the state economy cannot be overstated. Based upon current funding models, the WGFD is highly dependent on a sustained population of resident and non-resident hunters and anglers. Given this fiscal reality, hunting and angling R3 should become a top priority for the WGFD.

Are there other options that provide the current level of services in a more efficient manner?

Given the lack of staffing and significant budget cuts to R3 efforts within the WGFD, the current level of service is not sufficient to address the opportunities available to increase hunting and angling participation within the state's public. Priority should be given to re-filling staff positions so that the work done in 2013 by WGFD R3 staff to increase R3 effectiveness and efficiency can continue.

Recruitment, Retention and Reactivation Conclusions and Recommendations:

- In spite of modest growth in the number of hunting and fishing licenses sold in Wyoming, state fish and wildlife agencies must focus on efforts to replace retiring hunters and anglers. Changing demographics indicate that older hunters and anglers will be leaving this activity at rates higher than will be replaced. R3 efforts are particularly important to those state fish and wildlife agencies dependent on license sales for the majority of their income.
- WGFD should recognize the importance of R3 staff capacity issues and consider establishing a state-wide R3 coordinator with supporting staff as recommended in the National Hunting and Shooting Sports Action Plan as an "Immediate Recommendation" for state fish and wildlife agencies.
- Continue the work of the WGFD 2013 R3 strategic focus planning (Creative Process Trainings) by developing measurable objectives and ultimate outcomes for ALL R3 efforts of the WGFD. Discontinue or re-focus efforts that

³⁸ Southwick Associates. "Hunting in America: An Economic Force for Conservation." Produced for the National Shooting Sports Foundation in partnership with the Association of Fish and Wildlife Agencies. 2012.

cannot be shown to create new hunters and anglers or increase hunter and angler activity. For example, WGFD has discontinued the Expo, which was a well-attended event; however, these events have not been shown to increase hunter or angler activity.

- Form an R3 stakeholder group (agency staff, conservation and sportsmen NGO's, outdoor industry) to begin coordinating R3 efforts in Wyoming to increase the efficiency and effectiveness of individual efforts. This group should review the National Hunting and Shooting Sports Action Plan, the products of the WGFD 2013 strategic focus planning, the Wyoming license trend report, shooting range needs, and the FWF program design and evaluation materials. These resources will provide all of the guidance necessary for Wyoming to develop priority goals and strategies needed to sustain and increase its hunting and angling populations.
- Define and adopt agency R3 goals and require that ALL R3 efforts be evaluated for their long-term outcome in achieving those goals. Utilize resources available through the National Hunting and Shooting Sports Action Plan and the Western Association of Fish and Wildlife Agencies to develop a set of agency-wide R3 goals and objectives, and develop a state-level R3 strategy and implementation plan to achieve them.

Information Technology

When and why this program was originally established?

The Information Technology (IT) Program administratively resides within the Services Division of the WGFD and is physically located in their Headquarters Office in Cheyenne, WY. The current program is made up of Program Administration, Application Development, Operations and Support, and Geographic Information Systems (GIS).

The IT Program mission is to provide high quality services, and support, as well as secure technology solutions, to the WGFD and external constituents to allow for sound fiscal and management decisions. It consists of one major sub-program with 20.8 FTEs and an annual budget of \$2,941,791 (FY 2015). These positions include permanent, contract, and temporary positions authorized in the FY 2015 budget, as well as ten positions that were transferred to the State Department of Enterprise Technology Services (ETS) as a part of the statewide IT Consolidation Project. The

external ETS positions are included in this report as they continue to be funded through the WGFD IT Program Budget.

The WGFD IT Program is governed by the Information Technology Oversight Committee (ITOC), which serves as the administrative planning and oversight body for agency IT needs. This group is comprised of the WGFD Deputy Director for Internal Operations, at least one Chief or Deputy Chief from each Division, the WGFD Communications Director, and the IT Program Manager. The ITOC meets monthly and is responsible for reviewing and prioritizing IT projects, reviewing and approving technology budget and expenses, reviewing and recommending changes to existing IT-related policies and procedures, and advising both the Wyoming Game and Fish Commission and the WGFD Administrative Staff on issues related to IT efforts. WGFD personnel work through their respective Chief/Deputy Division Chief to provide input to ITOC meetings.

What substantive changes have occurred since that time?

Individual/Shared/Network/Storage & Backup

Since the mid-1970s, the WGFD has used both computers and associated electronic information systems and networks to facilitate the efficient exchange of information both among employees and between employees and outside entities. Originally, specific computer expertise was not necessary, and technically savvy WGFD personnel wrote their own computer applications. Since that time, the WGFD has used computers and computerized equipment to expand and enhance the volume and variety of tasks that can be performed by individual employees and/or groups of employees. As this capacity has grown and permeated every facet of the WGFD's operations, a broad array of responsibilities have developed that must be addressed at every level.

In 1996, the GIS section was organizationally combined with the WGFD IT Program to form what is now called the IT/GIS Program. In early 2004, due to the increased workload and an increasingly clear division of labor along with statewide IT governance initiatives, the IT portion of this program was split into two distinct sub-sections with a separate supervisor over each. With this change, the IT/GIS Program is now made up of three separate sub-sections (Operations and Support, Application Development, and GIS, in addition to Program Administration). These sub-sections are responsible for managing 22 physical servers; 78 virtual servers; 504 personal computers located in the headquarters office, eight regional offices, and remote locations throughout Wyoming, as well as 296 Internet Point-of-Sale

(IPOS) system touch screen devices located at WGFD offices and license selling agent locations throughout Wyoming. They were also responsible for developing and supporting over 75 mission critical applications and maintaining approximately 70 layers of statewide GIS data, additional derived data layers, and associated GIS applications. The program is also responsible for procurement and support of a wide range of peripheral devices ranging from printers to digital cameras, GPS units, and all related software.

To make effective technology strategy recommendations, IT/GIS personnel must maintain a thorough understanding of the goals, objectives, and methods through which the WGFD's various programs can connect. Continual changes to the environment in which the applications operate including interfaces to other applications; changes to hardware, software, and operating systems; new data from users; and evolving technologies. This requires a dedicated team of informed operations specialists, application developers, and GIS analysts working cooperatively to maintain and improve these systems.

New technologies (GIS)

In the mid-1990s, Geographic Information Systems (GIS) began emerging as a new technology, and various efforts were made to formalize and centralize the use of GIS in the WGFD. In 2004, the WGFD Deputy Director was directed to bring the use of GIS under control, resulting in a number of status reports, summaries, and guidance documents including: "Wyoming Game & Fish Department GIS Program – Current Status" (Status Report), "Establishing a Foundation for a Coordinated Department GIS Program" (Draft Goals & Objectives), "GIS Cost Breakdown-revised" (Budget recommendation), and "ESRI Licensing History" (Licensing summary). In 2005, a GIS planning meeting was held and a GIS workgroup was formed. Additional guidance was developed and/or finalized including "GIS Workgroup Goals and Objectives" (Goals & Objectives), "WGFD Data Inventory" (Department-wide Database Summary), "Information on the GIS Data Needs of the WGFD" (Information and Data Needs for WGFD), "GIS Cost Breakdown-revised" (GIS Budget Revision), and "Department GIS Workgroup Initial Proposal for GIS Program Funding – FY2007" (Comprehensive Proposal for GIS). A survey of user needs and workflow analysis was also performed. Subsequently, a proposal (Five Year Plan for Enterprise GIS Development) was approved and signed by Services, Wildlife, and Fisheries assistant division chiefs documenting the benefits of enterprise GIS to the agency and addressing budget and personnel needs. A bulleted justification for a dedicated position (Justification of the need for the ArcSDE position in the GIS Section – Talking Points) was produced that defined the responsibilities added to the GIS Section, and results that would be expected.

In May 2008, a summary of the GIS plan, WGFDD needs, desired outputs, and consequences of no action was prepared and distributed (Department GIS Plan Implementation Summary). A request to fill GIS Support Specialist position was also prepared and submitted. The GIS Support Specialist position was advertised and candidates interviewed but no candidate was selected. The interview committee chose to re-advertise, but a hiring freeze went into effect. In 2011, a new administration took office and abolished the previously frozen position. A GIS position/options strategy was produced to implement and maintain ArcGIS Server technology. An overview of the business case and budget submitted for FY2013/14 funding was made to Wyoming Office of Chief Information Officer (OCIO). This was approved and served as initial guidance for ETS-GIS activities. A quote for services and costs for initial implementation of ArcGIS Server technology was obtained from ESRI for WGFDD Implementation of ArcGIS Server. An outline of WGFDD Enterprise GIS Program was presented and discussed with the ITOC.

The WGFDD failed to fill a high-level At-Will Employment Contract (AWEC) position in the fall of 2012. They made their last attempt in Spring 2013, which failed when funding was withdrawn due to budget reductions. The four failed attempts over five years to fill this position as either a Full Time Equivalent (FTE) or AWEC was due mainly to inability to attract suitable candidates. In 2013, WGFDD GIS Section developed "A Strategic Plan of Action," which indicated that the use of geospatial technologies created several mission-critical needs with respect to those technologies, and the needs, roles, responsibilities and specific duties of the GIS Section were described. This effort formed the latest attempt to implement some aspect of enterprise GIS without the addition of new staff. Existing WGFDD staff began training in ArcGIS Server Administration to help prepare for this technology's implementation. Staff then began the installation and configuration of ArcGIS Server, with assistance from IT-Operations.

E-Commerce

Technological advances in e-commerce systems have made these systems a critical and essential link between agency and their customers. Since implementing the WGFDD's Electronic Licensing System (ELS) in 2007, both WGFDD and their customers have become increasingly dependent upon technologies to affect license sales (1,177,847 items totaling \$73,132,586 were processed through the WGFDD e-commerce system in calendar year 2014). The maintenance of data integrity and protection must be of utmost priority when handling and storing personal and/or transactional data. Currently, the WGFDD ELS has the capacity to service more than

230 concurrent License Selling Agents, plus many more Internet users (at peak times, there could be 6,000 to 8,000 Internet users per day).

Reduced or failed service during even part of a day can seriously impact business and certainly influence both internal and external customer perception of the WGFD. Conversely, when the IT Operations team is executing effectively in building and maintaining a robust infrastructure, and the IT Application Development team has programmed streamlined and well performing applications, their work is invisible since the technology is performing as employees and customers expect. This makes evaluations of program performance difficult when it is operating optimally.

Increasing emphasis on WGFD's e-commerce system, which includes its ELS, continues to place challenges on the IT Program related to integrating and centralizing many WGFD computer applications. The IT Program has integrated the large number of applications originally developed by employees into a centralized system, and these have to be serviced and maintained. As a result of increased technology and programming demands, some Application Development resources have been shifted to other agency requests; however, statutory and regulatory changes, especially those regarding data security, continue to require ongoing electronic license system enhancements by the IT Program.

Administration & Support

The IT Help Desk and IT Governance are in place to assist WGFD employees and external customers in fulfilling their needs and requests. In particular, IT Governance functions by setting rules and regulations under which the IT Program functions and establishes mechanisms to ensure compliance with those rules and regulations. A critical role of both entities is also to help protect against system failures, which have a great influence on customer satisfaction. This critical role requires that staff prioritize the maintenance of system uptime.

The IT Help Desk interacts with WGFD personnel on a constant basis. With the exponential rate that technologies are evolving, it can be a daunting challenge to provide the desired technologies, in a timely manner, and at a reasonable cost. In addition, employees typically need follow-up support. These challenges are especially true when considering that this must be done in compliance with the mandatory security standards.

The IT Program continues to provide extended-hours technical support for the IPOS, which includes 296 touch screen devices located at WGFD offices and license selling

agent locations throughout Wyoming. The provision of extended technical support has impacted the section's ability to respond as quickly to agency requests for technical services when compared to previous years; however, at present, the IT Program is able to keep up with demand.

In 2002, the Wyoming Legislature created a state Chief Information Officer position with significant implications for the WGFD IT Program. A statewide IT Governance structure was implemented, which began the centralization of common IT services throughout state government, including technology procurement. In 2012, the Wyoming Legislature consolidated the majority of technology statutes and created a new agency, the Department of Enterprise Technology Services (ETS) to house certain state government IT personnel. All positions in the WGFD's IT Operations section were identified to be transferred to this agency, which occurred on July 1, 2013. However, these staff were immediately reassigned directly back to the WGFD to perform their previous functions.

Other statutory amendments removed the WGFD IT Program procurement exemptions, and now require the agency to seek approval from the State Chief Information Officer prior to purchasing technologies that exceed a specified dollar threshold. As the IT Program continues to work through the transition and budgeting processes, the impacts to the WGFD's business processes and customer service continue to evolve. This process has required a significant amount of effort and time commitment, especially for the WGFD's IT Manager and IT Operations Supervisor. In turn, this transition has placed more workload on the Application Development, Operations, and GIS supervisors in order to address daily WGFD specific IT issues. Along with agency conformance to the statewide governance structure and accompanying changes in IT policy and technology procurement methods, these commitments have undoubtedly impacted satisfaction with the program's quality of services from previous years.

What are the goals and objectives of the program?

The primary functions of the IT Program are as follows:

1. Provide high-quality, secure technology solutions for the WGFD to support its overall mission and to empower personnel to achieve completion of their workload through the use of technology in a successful, efficient, timely, and cost-effective manner.
2. Provide services and support to ensure data integrity and security.
3. Provide support to external constituents by providing and supporting an Internet hardware and software framework to facilitate better WGFD

communication with its constituents and to provide a means for dynamic interaction between the WGFD and the general public.

4. Facilitate sound fiscal decisions by evaluating technology to identify the best solution to a given problem, challenge, or situation and leverage information technology network architecture, hardware, and software to identify opportunities for cost savings.
5. Facilitate sound management decisions by developing and maintaining WGFD data standards and applications to support WGFD-wide centralization of data; identifying and developing technical options for resolving application or system problems; researching new technology and making recommendations on the adoption of new methods or the acquisition of new technical hardware and software tools to improve agency operations; and monitoring emerging technologies to effectively evaluate opportunities to improve current agency operations by incorporating or migrating to viable new hardware, software, and technology implementations.

How are the goals and objectives determined and evaluated, and at what frequency?

Percent system uptime is the primary measure of success within the IT Program. Within the program, staff work to ensure the system is up at least 95 percent of the time. Customers, suppliers, and staff are greatly impacted by system and service failures. Additionally, network outages, server failures, e-mail downtime, and broken desktop computers significantly reduce the productivity of the WGFD and impact its IT/Public interface, adversely affecting customer service. System uptime is perhaps the most important performance measure for the IT Program both to allow personnel to conduct their work and to maintain consistent license sales. Average uptime for WGFD systems for FY 2015 was 99.254 percent, down from 99.725 percent in FY 2014, however still well above the 95 percent goal.

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

The IT Program functions primarily in support of agency employees and as the electronic interface between the WGFD and the public. Such a function does not provide, in and of itself, a revenue stream. However, it should be noted that a significant portion of license and permit sales, hunt applications, and other revenue generating applications flow thru the IT section, and without it functioning optimally, the WGFD could potentially lose revenue.

Combining or merging programs and/or positions is often an effective governmental cost-savings measure, since duties and responsibilities of similar programs across state agencies can be remarkably similar. From an IT Program perspective, this can be especially true due to common technological requirements, and most states have already undertaken similar measures. Wyoming is no exception. As a part of a statewide IT Consolidation Project, ten WGFD positions were transferred to the State Department of Enterprise Technology Services (ETS). However, these external ETS positions continue to be funded through the WGFD Information Technology Budget and conduct work for WGFD.

Additional efficiency measures include the use of at-will contract employees, grant-funded employees, or other similar actions to control and manage agency costs. WGFD IT Program currently uses this approach where feasible, to provide IT services to the agency, while minimizing expenses and maximizing flexibility. For example, one contract Geographic Information Systems (GIS) Analyst position was funded in the FY 2014-15 General Fund budget, and one additional contract position was continued with funding from the U.S. Fish and Wildlife Service.

What are the wildlife, public, and economic benefits provided by this program?

Public opinions of the IT resources of a state agency are difficult to ascertain, although when those services are interrupted, the public certainly responds in a negative manner. Because IT supports not only the internal needs of the WGFD (email, internet, mobile devices, etc.) but also the external “front facing” electronic public interface (Electronic Licensing System, Website, email, social media accounts, etc.), public perception is particularly important as agencies evolve into an increasingly electronic world.

The most recent External Customer Satisfaction Survey that addressed IT satisfaction occurred in FY 2014. This survey included two specific questions regarding the IT/Public interface. The first item was, “Q25. What sources do you use for customer service assistance?” Most (69.5%) respondents indicated they used the WGFD website for information and assistance, with others using social media such as Facebook (2.7%) and text or email (5.4%). Responses to the second item, “Q26. What is your PREFERRED source for getting information from WGFD?” revealed that the WGFD website was the PREFERRED method of obtaining information from WGFD. Fewer respondents preferred email and text (1.2%) or Facebook (0.8%).

The FY 2013 External Customer Satisfaction Survey contained seven questions addressing satisfaction with the IT/Public interface. These were as follows:

- 1) Q 34. What is your PREFERRED source for getting information...from WGFD?
- 2) Q 38. Did you use the WGFD Website last year to obtain information...?
- 3) Q 39. If you have visited the WGFD website, please tell us why you visited it?
- 4) Q 40. What is the reason you MOST OFTEN visited the WGFD website?
- 5) Q 41. When you visit the WGFD website, are you able to locate the information...?
- 6) Q 42. When you locate the information you are looking...does it answer your question?
- 7) Q 43. Is there information you are looking for that is not provided...?

The responses to the questions in the FY 2013 survey indicate significant public support and approval for the IT/Public interface. For example, 64.6 percent say that the website is their preferred source of information. More than 81 percent used the website in the previous year to find information. Users primarily used the website to apply for licenses (78.6%) but also used it to prepare for hunting (72.1%) or fishing (26.9%) trips, for regional news and information (33.3%), and for reporting harvest data (35.8%). The reason given for most often visiting the website was to apply for or purchase a hunting or fishing license (44.4%) prepare for a hunting trip (33.3%), or prepare for a fishing trip (9.1%). More than 95.5% of the respondents indicated that they found the information that they were looking for on the WGFD website, and 92.5 percent indicated that this information answered their questions. Only 27.6 percent of the respondents indicated that there was information that they were searching for that was not provided on the website. This general support of the IT/Public interface is important to the viability of any public agency in today's electronic environment, especially in agencies that are regionally distributed and managed across a state. The results from the most recent surveys indicate the WGFD is providing the information that most of their customers are seeking.

Partnerships to advance the IT Program

Security of data (personal, financial, transactional, biological, etc.) limits the ability of the WGFD IT Program to seek outside partnerships to assist or function in implementation and management, of their essential operations. Additionally, the IT Program is tightly regulated via extensive policies and procedures authorized and implemented under the statewide Enterprise IT consolidation. Therefore, there are no current viable options for creating or entering into partnerships or contracting with private vendors for services that are under the direct control of WGFD or its IT

Program. Any such ventures would necessarily have to be implemented at the statewide level through the Office of the Chief Information Officer (OCIO).

Policies & procedural manuals for the IT Program

WGFD provided 65 statewide IT policies and procedures for this review. These policies and procedures covered such areas as Information Security, Acceptable Internet Use, Email Use, Website Standards, Privacy & Protection of Data, Backup & Storage, Password Standards, Mobile Device Usage, and Social Media, among others. These were examined by WMI and determined to be consistent with the Policies and Procedures for other state fish and wildlife agencies (they were identical to agencies within Wyoming government since they were statewide in scope and authority).

Expenses associated with IT Program

The IT Program consists of one major sub-program with 20.8 FTEs and an annual budget of \$2,941,791 (FY 2015). These positions include permanent, contract, and temporary positions authorized in the FY 2015 budget, as well as ten positions that were transferred to the ETS as a part of the statewide IT Consolidation Project. The external ETS positions are included in this report as they continue to be funded through the WGFD Information Technology Budget. Any positions added within a budget cycle require Commission authorization or must be funded from supplemental grants.

Additional analyst position(s) to assist with programming and to interface between the IT Program and various WGFD divisions would also improve support and operations. There is also an unmet budgetary need for mobile tablets and/or data terminals for biological, law enforcement, and other data purposes, and new IPOS licensing equipment with modern, Microsoft-supported software (the current platforms for the IPOS system, Microsoft XP, is no longer supported).

An additional significant need is funding to support dedicated application developers for Enterprise GIS. As discussed previously, the WGFD has made numerous efforts over the past decade to gain support for both staff positions and funding to adequately support agency-wide GIS needs. These efforts have failed for various reasons, including the freezing and abolishment of positions, the lack of funding, and the failure to recruit and hire qualified candidates. Increased funding in this area would help to stabilize and modernize what has become an essential element for any modern, state fish and wildlife agency.

WGFD demand for GIS support continues to increase, even in the absence of adequate funding and positions, largely due to the internal needs for effective resource planning and management and the increasing external demands by regional and national initiatives such as the Western Governors Association's Wildlife Council Crucial Habitat Assessment Tools (CHAT), the Great Northern Landscape Conservation Cooperative, and the Wyoming Geographic Information Science Center, which is working to re-develop the WGFD's GIS-based decision support system. Additionally, as more efforts have been initiated to address concerns associated with species and their habitats (sage-grouse implementation recommendations, State Wildlife Action Plan revision and implementation, Strategic Habitat Plan revision, etc.), impacts on data needs, analyses, and GIS technology products have increased.

Are there other options that provide the current level of services in a more efficient manner?

Given the highly specialized nature of WGFD's information technology needs for: licensing, registration, data collection, data analysis, data security, geospatial biological data, natural resource law enforcement, and unique data bases; WMI does not believe that out sourcing this function is in the best interest of the WGFD or the resources it conserves and people the agency serves.

Information Technology Conclusions and Recommendations

- The average uptime for WGFD systems for FY 2015 was 99.3 percent, down from 99.7 percent in FY 2014. However it was still well above the 95 percent goal. Given that the IT/Public interface is such a mission-critical component of a modern state agency, WMI recommends moving their goal to 98 percent.
- WMI recommends that WGFD support the continued efforts and necessary expansion of the WGFD IT Program as detailed in the WGFD IT Resources Request provided to WMI. The pace of technological changes and the reliance on technology throughout the WGFD demand constant upgrading and improvement of IT systems.
- WMI finds that increased emphasis to improve both the customer experience via the IT/Public interface and the internal work functions of staff would benefit WGFD.
- WMI finds that there is an unmet need for mobile tablets and/or data terminals for biological, law enforcement, and other data purposes, and new IPOS licensing equipment with modern, Microsoft-supported software (the current platforms for the IPOS system, Microsoft XP, is no longer supported).

WMI recommends that WGFD modernize mobile tablets/data terminals for officers and POS equipment and software for license agents.

- WMI finds that there is a significant need to support dedicated application developers for Enterprise GIS. WGFD demand for GIS support continues to increase, even in the absence of adequate funding and positions, largely due to the internal needs for effective resource planning and management and the increasing external demands by regional and national initiatives. Increased attention to this endeavor would help to stabilize and modernize what has become an essential element for any modern, state fish and wildlife agency.

Wyoming Wildlife Magazine

When and why this program was originally established?

The Wyoming Game and Fish Department printed the first issue of *Wyoming Wildlife* in January 1936. The magazine was published monthly during the Great Depression and only missed a bit more than a year at the end of World War II. Over the years the publication has won more than 100 national awards, a quarter of that number from one organization in the last fourteen years. For comparison purposes, *Montana Outdoors*, another long-tenured agency magazine from a nearby state, was recognized for its excellence 29 times during same time period. A table below provides details from the Association for Conservation Information³⁹ awards program regarding the 26 awards to *Wyoming Wildlife* from 2000 - 2014.

The 48-page glossy, full-color magazine has always been published 12 times a year. The stated target audience for the publications includes anglers, hunters and wildlife enthusiasts. Information provided from the Agency stated the distribution is approximately 30,000 with two-thirds of the readership out-of-state. The Agency stated that with an average household size of 2.59 people, it is estimated that the magazine reaches about 81,118 people per issue.⁴⁰

What changes have occurred in the magazine program since its inception?

The publication has remained monthly since inception and the content has remained focused on delivering scientific information to the public in a way that is

³⁹ From www.aci-net.org

⁴⁰ Document last modified on 11.10.15

digestible and enjoyable to consume. It is a general-interest magazine that tells the story of Wyoming's wildlife, the agency charged with its stewardship and the public who enjoy it.

Staff changes are inevitable over the life of a magazine that began in 1936. The magazine editor left the agency in 2013 after 30 years. This was shortly after discussions began regarding changing the content of the magazine and proposals to reduce the number of issues of the magazine from the traditional 12 issues to 6 issues took place. The next editor, stayed through the end of 2015. A temporary acting editor took over the reins until recently when a permanent replacement was hired.

In July of 2013 the magazine operation moved from the Services Division to the Directors Office along with other like programs including publications, media relations, outreach, hunter education and conservation education. At the same time, the Regional I & E staff and the Call Center operation were moved to the supervision of Wildlife Division and the Fiscal Division respectively. The magazine editor now reports to a Business Office Supervisor II. The unit is managed by a Game and Fish Manager III – PIO who reports to the Director.

In January 2014 the magazine's content changed with the incorporation of a director's column, literary column and time-sensitive information about agency application deadlines, hunting and fishing seasons, etc. This change was the result of a decision to cease publication of *Wyoming Wildlife News*, a 12-16 page tabloid style newspaper as a cost-savings method. Adding some of the key content to the monthly magazine addressed the ongoing need for the delivery of this information, albeit now requiring license holders to subscribe to the magazine to obtain some of what was included in the free *Wyoming Wildlife News* publication. Other changes included incorporation of the yearly *Wyoming Wildlife Calendar* as the November issue of the magazine.

With the reduction in production staff from a high of five, to three in FY 2013, and currently two FTEs, the magazine has shifted to freelance photographers and writers to provide a majority of the magazine content.

What are the goals and objectives of the magazine program?

The WGF's Strategic Plan indicates the mission of the information program is to disseminate information to promote public understanding and support for wildlife, wildlife habitat, wildlife conservation, and the WGF's management programs.

To achieve this mission, the WGF D strategic plan provides the following goals and objectives for *Wyoming Wildlife*:

- Grow subscribers
- Celebrate wildlife conservation and deepen readers' interest (and support for) wildlife and wildlife conservation in Wyoming
- Develop and conduct a survey of *Wyoming Wildlife* readers
- Explore developing an advertising policy

Progress toward achieving the goals and objectives is examined annually in conjunction with the strategic planning document report. According to the agency, monthly renewal rates are analyzed and demonstrate an average retention rate of 80% for what they consider the most important demographic of third time renewals.

The strategic plan performance measure for this project is "Paid subscriptions of *Wyoming Wildlife* magazine and *Wyoming Wildlife News* (personnel in this program will work to maintain at least 35,000 active subscriptions to these two publications)."

Given that the *Wyoming Wildlife News* publication is no longer produced, this Performance Measure should be amended to provide an alternate target. More attention needs to be given to the overall purpose and desired results from the production of this legacy publication.

The number of paid subscriptions is not achieving the stated objective of 35,000 active subscriptions. In fact, the number of subscriptions has declined from 28,158 on 8/15/14 to 23,846 on 5/11/16. Action should be taken either to reverse this trend and increase subscribers or revise the goal. Given the increasing reliance of the public on electronic communication, WGF D should explore ways to expand exposure to the magazine content through its website, both as a way to increase subscriptions for the hard copy and to communicate with members of the public that are not interested in reading a physical magazine.

Have you explored increasing revenue for the program?

Subscription Fees

The agency plans to ask customers about a potential increase in the cost of an annual subscription once subscriber surveys are instituted.

The last subscription increase was in May 2000 when the price went from \$10 a year to \$14.95 a year and \$35 for three years. During that year with Infonet, WGF D's

subscription consultant, price point testing took place through promotional mailings -- at \$20, \$15 and \$12 -- and this test resulted in reducing the price to \$12.95 in May 2001.

A state agency magazine editor survey (20 states, including WY) completed for this review indicates that the subscription fee for printed agency magazines ranges from “no cost” in Missouri for twelve issues mailed in-state to \$18.00 in South Carolina (6 issues) and Nebraska (10 issues.) By comparison, Wyoming charges \$12.95 for 12 issues. Most states responding to the survey produce 6 issues. The average subscription cost for the states producing 6 issues is \$11.29, with discounts for multiple year subscriptions. Based on this comparison *Wyoming Wildlife* appears to be underpriced.

Advertising

The agency states they are interested in obtaining subscriber feedback about the potential use of advertising to support the cost of the magazine. This could take a variety of directions but the agency seems to favor exploration of a single-advertiser belly-band around each issue; no ads in the magazine. Only 2 of the 20 state magazine editors who responded to the survey indicate they use advertising to support costs of their magazine.

Other Revenue Ideas

WGFD charges an entry fee to those who enter the annual photo contest associated with the magazine. The winning photography is used to produce the Wyoming Game and Fish Calendar, mailed as one issue of the magazine to subscribers, and offered for sale to others.

WGFD has experimented with newsstand sales of the magazine. No data were available to evaluate this method. (See discussion of newsstand price in Recommendations section.) They are also considering adding an opportunity to purchase a subscription in the license/permit purchase process online.

What programs could be combined with the magazine program to improve efficiency?

The magazine program shares staff within the unit responsible for outreach, publications and education. The currently unfilled, but retained Human Dimensions Research position, could be added to this work group. This co-location and staff sharing contributes to efficiency and follows the professional approach to communication that always begins with research. Reinstating the HD position would make a large contribution to the WGFD overall programs. The four-step

public relations process — Research, Planning, Implementation and Evaluation (RPIE) —informs a public relations plan with qualitative and quantitative data, and lifts the public relations function from tactical to strategic.⁴¹

As discussed above some of the content previously published in the *Wyoming Wildlife News* has been added to the magazine as an efficiency move, when that publication was terminated. The Calendar has been added to the content mix as the November issue and the photos for that issue come from the agency photo contest.

What are the wildlife, public, and economic benefits of the magazine program?

No surveys have been conducted recently regarding the potential benefits of the magazine program. The following benefits were cited by the agency.

- Interpretation of scientific information
- Listening tool for the WGFD (through the feedback column)
- Encouraged land owner license donations through highlighting veteran hunts
- Highlighting the statewide value of wildlife
- Bringing awareness to application deadlines –volume, license sales

Wyoming Wildlife Magazine Conclusions and Recommendations

- In spite of national awards, the *Wyoming Wildlife* magazine continues to experience declines in the subscription rate and has relatively low penetration in the Wyoming resident market.
- There have been no recent attempts to request subscriber input into the magazine’s design and content. Instead, these decisions are based on best intentions without the aid of public (reader) involvement. Addressing public opinions and what the public values would allow *Wyoming Wildlife* magazine to contribute to the WGFD’s mission of “Conserving Wildlife, Serving People.”
- *Wyoming Wildlife* could provide the WGFD with a powerful tool to provide information on WGFD programs, fish, wildlife and their habitats. Public awareness of these issues may garner public support and engagement in WGFD programs.
- WGFD should institute a “relationship focus” to the work of the WGFD based on increased public engagement with Wyoming residents and nonresidents.
- WGFD and the Commission should create an agreed-to statement of purpose for the magazine.

⁴¹ http://www.prsa.org/learning/calendar/display/5520/the_four_step_process#.V3-ZYeTHzIU

- WGFD should conduct periodic subscriber surveys to obtain baseline data to measure results/trends
- WGFD should track revenue and expense data to adaptively manage magazine content based on data and evidence.
- WGFD should consider the online presence of the magazine with an eye toward increasing subscribers.
- WGFD should establish a consistent single copy and newsstand price.

Conservation Education

When and why this program was originally established?

For the purposes of this review Conservation Education refers to activities and processes directed by the WGFD that “*serve people by ... providing information and education about wildlife and wildlife-related issues.*” Hunter Education is not considered in this segment and a review of recruitment, retention and reactivation (R3) is contained in another section of this review.

The Conservation Education (CE) program is, by comparison to other WGFD efforts, a relatively new addition to the services provided by the WGFD. Changes in this still-evolving program are detailed in the following review.

In the mid-90s the WGFD conducted a visioning process with its publics that led to the establishment of “Information and Education” positions in the agency. Prior to that time there were staff members in the Cheyenne office that provided some of these services. The visioning process resulted in the adoption of the recommendations made by participants – adding positions that would change the quantity and quality of information available to the public.

During 2005, the Human Dimensions Committee of the Western Association of Fish and Wildlife Agencies conducted a multi-state study to determine *Wildlife Values in the West*. During previous work, researchers identified four basic value orientations held by people towards wildlife. These include Utilitarian (believe wildlife should be used and managed for human benefit), Mutualist (humans and wildlife are meant to co-exist or live in harmony), Pluralist (have beliefs consistent with both the Utilitarian and Mutualist view points), and Distances (either are uninterested in wildlife or have weak value orientations toward wildlife).

Within the 19 western states, approximately 34 percent of residents can be classified as utilitarian, 33 percent are mutualists, 20 percent as pluralists, and 13 percent possess distanced orientations. In contrast, 44 percent of Wyoming residents were found to hold utilitarian value orientations, 31 percent were identified as pluralists, 18 percent were mutualists, and only 7 percent held distanced value orientations.

A logical conclusion based on this research is that the people of Wyoming have a strong and diverse interest in and appreciation for the state's wildlife resources with very few people falling in the distanced value orientation. Therefore, educational programming is likely of interest to the majority of people holding these other wildlife values. This interest emphasizes the importance of a broad CE program that builds natural resource stewardship behaviors within the Wyoming public as well as an understanding and support for the agency's purpose and programs.

Since its establishment, the CE program has undergone a variety of changes and continues to be responsive to the perceived needs of the agency and state, while taking into account current thinking and best practices in education. In part, this concern for the value and return on investment led to the consideration of a variety of changes to the CE Program. In 2015 and 2016 the Wyoming Game and Fish Commission and WGFD staff worked together to explore alternatives and priorities for CE and recommendations for future educational programming have been adopted by the Commission in July 2016.

What substantive changes have occurred since that time?

In 2009, the Information and Education Program was located within the Services Division of the WGFD. The following activities were a part of the programs responsibilities: conservation/hunter education, regional I & E specialists, outreach, call center and human dimensions research. A WGFD Manager III who reported to a WGFD Administrator managed the program. There were 4 supervisory positions. Positions allocated to the program numbered 30.

By 2012, when the organizational changes described further below took place, there were changes in personnel as well. The longtime magazine editor and other publications-related staff left their positions or transferred internally, as did the people in the human dimensions, conservation education and R3 positions.

In 2016, the organization chart looks quite different for the information and education program. The call center is now located in the Fiscal Division, and responsibility for the Regional Information and Education (I&E) group moved to the Wildlife Division with each regional I&E person reporting to a regional office manager (WGFD Manager II.) This leaves the Conservation Education, Hunter Education, R3 efforts and outreach/communication programs to be located in the Office of the Director, managed by a WGFD Manager III – Public Information Officer (PIO) who reports to the Director. A Business Office Supervisor II supervises the program. Lost in these changes was an aquatic education position, which was not retained. The vacant Human Dimensions position is on a list of 10-15 positions held in reserve that may be filled. This position is anticipated to be under the management of the WGFD Manager III – PIO when filled. The work group is now comprised of 10 positions at this writing with 3 of those vacant, including the designated Conservation Educator.

It is important to understand the organization and delivery of education services within the WGFD to further detail the role of the Regional Information and Education staff in the field. These Senior Public Relations Specialists have responsibility for local information and education activities in their assigned region. Their precise duties and the split between information and education activities can best be described as a continuum. In some regions more education work is accomplished and in others (the larger media markets in particular), more media and information-related activities are required. There is a sliding scale of responsiveness at the present time to local needs. In Casper, for example, the work is primarily media relations or “Information” work. In Green River, the work is mostly education. For more detail about specific educational activities in each region the staff have a “living” document that provides information about their programs at a given point in time.

In light of the change in reporting responsibilities for the Regional I&E staff from the Services Division to the Wildlife Division, it is important to review the processes used to select the topic areas/issues/programs that are addressed in the resulting I&E work. The Regional I&Es are in the Wildlife Division and select their areas of emphasis based on Divisional priorities established and reviewed each year. They also address specific efforts identified by the leadership in each region.

In the absence of an agency communication/education plan, the WGFD states that the balance between a focus on information (media work) and education (in-person programs) is driven by agency leadership and by regional needs. The personnel in those positions adjust their focus on either information or education at different

times. Currently, the focus of their work is more driven by the needs and ideas of each region.

The administrators and managers ensure that targeted topics and associated messaging are delivered in a consistent manner with the direction from the Director's Office. Targeting, consistency and coordination of messaging is actively managed via a monthly call. In addition a weekly coordination call, managers review plans for when and what news releases will go out and ensures each region knows of challenges or opportunities occurring elsewhere in the state as it relates to messaging and/or events. This weekly meeting helps is the WGFD be more proactive than reactive in its education and communication work.

The WGFD provided information from completed in 2000 through 2009 that provided a satisfaction ranking with the ability of each Regional I & E staff person to conduct education efforts in the region. The scores range from a low of 55.2 percent in one region to a high in another region of 97.3 percent in 2007.

How have the programs changed?

In 2012 the agency responded to a need for budget reduction and examination of the efficiency of its programs and organization. In addition, the agency worked with a Wildlife Management Institute representative to review existing programs and to develop an R3 effort. This led to the recent discussions of Conservation Education programming referred to above in concert with the WGFD's Commission. Applying the same results chain methodology used in R3 program planning to a review of conservation education programs the agency made preliminary decisions about current programming and future actions required as follows. The programs that were terminated (i.e., one-time in school programs, Project WILD, Youth Camp, and Becoming and Outdoors Woman) reached diverse audiences including women, teachers and youth, which seriously limited public outreach and education efforts. Conservation education programs cannot be evaluated solely on ability to sell licenses. Rather it is designed to build understanding and grow stewardship and support for wildlife resources and the state agency's role in managing same.

In FY14 when the WGFD significantly reduced its budget, it continued with the CE changes from FY13, including cutting several education programs and opportunities. The Program continued to focus on Hunter Education, Forever Wild Families, volunteer programs and the development of new Forever Wild Educator Resources.

What are the goals and objectives of the program?

The current goals and objectives of the CE Program are found in the agency's strategic plan⁴². The mission is to provide learning and participation opportunities relating to both aquatic and terrestrial wildlife management, wildlife conservation, wildlife related skills, and lawful and ethical behavior.

The primary functions and performance measures of the Conservation Education Program are to:

- provide learning and participation opportunities to youth and adults in outdoor skills, and as required by state statute, continue to offer hunter education so that hunters engage in ethical, lawful, and safe actions.
- create awareness in youth and adults of the importance of planned management practices for wildlife and their habitats within their specific ecosystems.
- Performance Measure #1: Number of educational opportunities offered and number of people reached annually through conservation education efforts (personnel from this program will work to provide at least 200 conservation education opportunities to 50,000 people).
- Performance Measure #2: Percentage of participants rating conservation programs as "meets expectations" (personnel with this program will work to ensure that programs meet or exceed the expectations of at least 80 percent of participants).

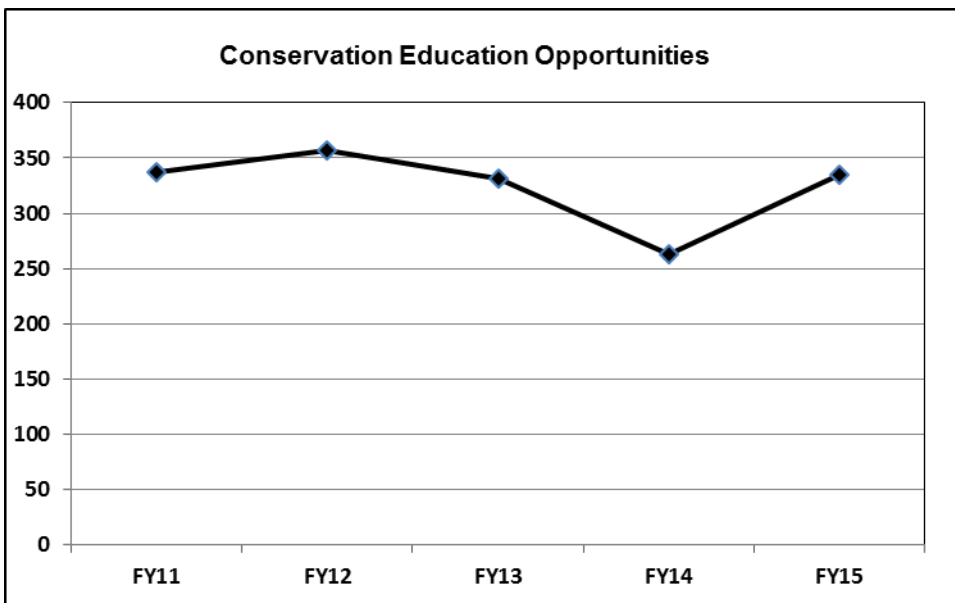
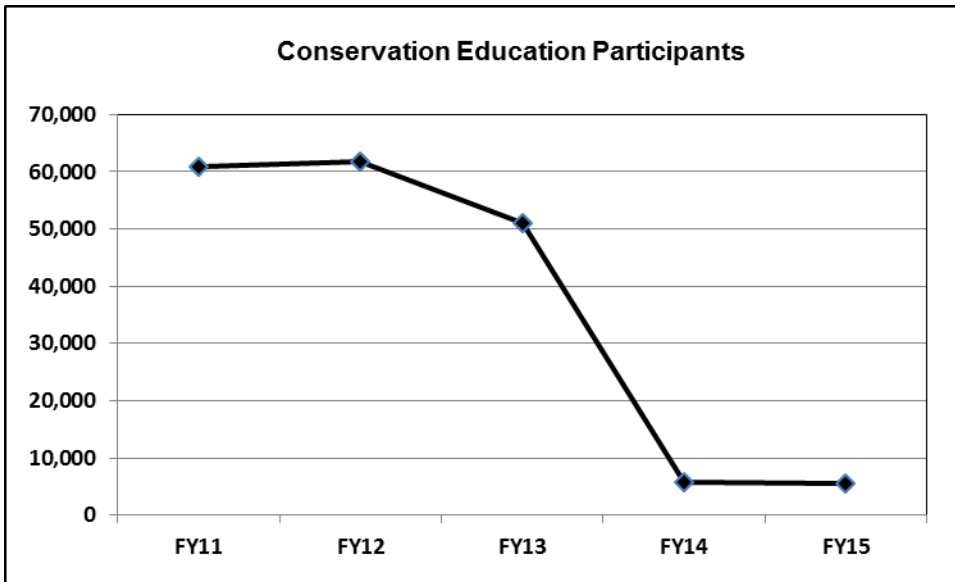
How are the goals and objectives determined and evaluated, and at what frequency?

Progress related to the performance measures is calculated each year in association with the preparation of the strategic plan annual reports.

In FY 2015 the two Conservation Education Program performance measures were evaluated with the following result as noted in the narrative prepared by the WGFD.

Performance Measure #1: Number of educational opportunities offered and number of people reached annually through conservation education efforts (personnel from this program will work to provide at least 200 conservation education opportunities to 50,000 people).

⁴² Wyoming Game and Fish Department, Comprehensive Management System, Strategic Plan, FY17-FY21



FY 15 continues the changes from FY 14 to the CE Program when the WGFD significantly reduced its budget, including cutting education programs and opportunities. With the reduction of these services, the WGFD continued to focus on Hunter Education, Forever Wild Families, and the Volunteer Programs, as well as development of new educator resources.

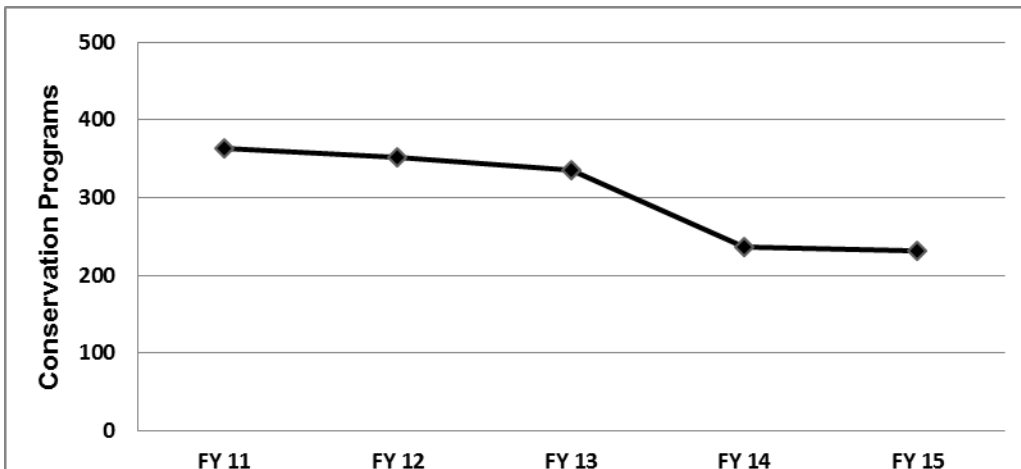
It is important to note that in relation to Performance Measure #1, the above data largely relates to the development of the teacher resources only. CE efforts outside of Hunter Education and R3 programs like Forever Wild Families were limited during this period of change.

Performance Measure #2: Percentage of participants rating conservation programs as “meets expectations” (personnel with this program will work to ensure that programs meet or exceed the expectations of at least 80 percent of participants).

Surveys related to this performance measure are not relevant at this time. They are directly related to the Forever Wild Families Program, as no other Headquarters conservation education programs are taking place at this time and previously CE programs had not conducted surveys. However, WGFD should institute performance measures.

The Regional Information and Education operation (RIEs) has separate performance measures, one of which is pertinent to this review.

Performance Measure #2: Number of wildlife conservation education programs (Personnel in this program will work to provide at least 100 education programs per year.)



The RIEs work collaboratively with other Information and Conservation Education Program personnel to provide conservation education programs to the public. Those programs include traditional hunter education courses and internet field days; New Hunter Education Instructor Academy; Project WILD workshops; Staying Safe in Bear, Lion, and Wolf Country seminars; Forever Wild Families; and 4-H Outdoor Skills Competition.

The RIEs provide outdoor skills training, field trips, tours of WGFD education centers, and conservation education programs to primary and secondary schools and colleges, civic clubs, and conservation groups within their respective regions.

The REIs has continued to provide assistance to the Forever Wild Families program. Activities include: fishing, hunter education, outdoor skills, pheasant hunting,

pronghorn hunting, elk hunting, turkey hunting, ice fishing, a class on applying for the WGFD license draw, fly fishing, tracking, and a simulated big game hunt.

A popular owl education programs with the WGFD's live great horned owl was provided to school groups, art classes, camps, and nursing homes throughout the year. Educational outreach exhibits included an annual "Elk Fest" celebration where several hundred people were contacted.

All these programs are conducted without benefit of an overall public outreach and education plan or target outcomes for WGFD other than an output target of "Personnel in this program will work to provide at least 100 education programs per year."

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency?

Currently, the WGFD does not monetize CE programs. When Whiskey Mountain conservation camp program was operating, the objective for that program was to ensure that it be affordable rather than a profit center. As noted throughout this review, WGFD operates other programs that are important even though expenses exceed revenues for that program.

There may be opportunities for the WGFD to monetize CE programs. Options are noted in the report from a WGFD survey conducted in May 2016.

What partnerships have WGFD formed with other entities to advance the conservation education program?

The Regional Information and Education employees deliver education programs internally.

The WGFD has been an active participant in the Natural Pathways pilot program of the Association of Fish and Wildlife Agencies – CE Strategy as it examines through research the role of conservation education as a recruitment tool, moving people forward in conservation and outdoor recreation through results chains originally developed for R3 programs.

Forever Wild Families program partners with North Platte Walleyes Unlimited, Sturm, Ruger & Co., Hornady Mfg., Sierra Trading Post, Wyoming Wildlife Federation, University of Wyoming Extension, Allwayz Manufacturing, Federal

Ammunition, Wind River Mountain Outfitters, Wind River Outdoor Company, Wind River Troutfitters, Appaloosa Broadcasting, Pioneer Printing, Guns and Gear, Muley Fanatic Foundation, Rocky Mountain Discount Sports and Vortex Optics. Grants have been received from: Association of Fish and Wildlife Agencies, Wyoming Wildlife-The Foundation, Wyoming Governor's Big Game License Coalition, Wyoming Wildlife Federation, Weatherby Foundation and the National Wild Turkey Federation.

Wyoming educators will be partners in delivering educational programming using The Forever Wild Teacher Resources on behalf of the WGFD.

The Forever Wild Teacher Resources program was created through a contract with two curriculum writers and funded by grants from the Wyoming Trust Fund, Commissioners Licenses and the Rocky Mountain Elk Foundation.

Wyoming Project Wild - Project WILD's mission is to help students learn how to think, not what to think, about wildlife and about the environment. Game and Fish funding for Project WILD was cut in 2013. Following that, a group of professionals established the non-profit organization Wyoming Project WILD because they believed a loss of the program would be a detriment to wildlife conservation education in Wyoming. Since its inception they have conducted 12 educator workshops in Wyoming and trained over 150 educators, which in turn, have reached out to thousands of youth.

What programs could be combined with the conservation education program to improve efficiency? What are other ways to improve efficiency?

It is a logical and efficient move to include hunter education, conservation education, human dimensions research and communication and outreach programs in the same unit. Each addresses the human element of conservation and should use research steps in program formation and evaluation. Close proximity to one another under the supervision of one manager facilitates communication and sharing of information, successes, concerns and exploration of potential improvements focused on related disciplines. In addition, this unit should work closely with all other divisions/programs of the WGFD to ensure transparency, outward flow of information to constituents and the inward flow from program managers and constituents to inform the WGFD's work.

What are the wildlife, public, and economic benefits provided by this program?

WGFD is currently involved in a close examination of the CE program. It should be noted, however, there is no current survey/research to measure the benefits or impacts of the WGFD's CE efforts. WMI strongly recommends that public assessment of all CE efforts be conducted. There may be other organizations in Wyoming who have research that would be helpful to the WGFD CE program such as the Wyoming Alliance for Environmental Education and the state Department of Education. Their data or formative evaluation results may contribute greatly to current and future CE program development.

How does the WY conservation education program differ from surrounding state programs?

Staffing: At the present time the conservation education program is staffed by one FTE, plus some time from the seven FTEs assigned to the Regional I&E program. In a survey prepared and summarized for this review, 23 states reported their programs have between 0 and 58 FTEs. In the past five years, the number of FTEs stayed the same in 11 states, increased in 7 states and decreased in 5 states. In Wyoming, the number has decreased.

Participant Fees: 10 state survey respondents charge participant fees and 10 respondents do not. This may be a topic for discussion as the reconstituted conservation education program moves forward.

Types of programs: The 5 most often cited programs include teacher professional development (85%), aquatic education (85%), in-classroom programs (80%), trunks and kits (80%) and the Project Wild family of programs (80%). Of these, Wyoming offers 2 of the 5 – teacher professional development in the Forever Wild Teacher Resources and the trunks and kits through the Regional I&E program. Project Wild is delivered by an external group named Wyoming Project Wild. WMI can share a complete list of programs conducted in other states with WGFD.

State Environmental Literacy Plan: The 2016 survey indicates that 11 responding states have an ELP, 8 do not and 2 were unsure. It appears that Wyoming is still in the drafting process of their plan.

A 2014 document at the National American Association for Environmental Education indicates Wyoming to be in the process of drafting their ELP. (current status was requested for this review, but not received) Overall status is noted as - 13 states have completed ELPs that have been adopted and implemented by state departments of education, state legislatures, governors, and other decision-making

entities, according to each state's adoption process. Four states have completed ELPs that have been adopted but not yet implemented; twelve states have completed ELPs that have not yet been adopted; Eighteen states are in the planning and writing phase of their ELPs, 4 of which have completed drafts that are out for review; four states have not yet begun ELP development.

The Wyoming Alliance for Environmental Education is a 501(c)3 nonprofit composed of citizens working to increase the prevalence and improve the quality of environmental education throughout the state. They believe every resident of Wyoming should have the opportunity to acquire the knowledge, skills, values, and commitment needed to protect and restore Wyoming's natural heritage.

Founded in 1992 as the Wyoming Association for Environmental Education (WAEE), the organization was originally comprised of EE professionals. It was membership-based and served to support the professional development and work of EE providers. In 2014, the organization became the Wyoming Alliance for Environmental Education with a much broader mission and vision. No longer membership-based, we now work with many people, agencies, and organizations to advance environmental literacy and build an infrastructure to improve environmental education in schools and communities statewide.

WAEE is proud to serve as the Wyoming affiliate of the North America Association for Environmental Education. In that capacity, we are part of the Affiliate Network of NAAEE, which promotes collaboration for maximum effectiveness and efficiency and a unified voice for environmental education across North America and beyond. The Network is comprised of EE organizations in the US, Canada, and Mexico and provides a forum for ongoing dialogue and activities that enhance EE capacity at all levels. This organization is a good resource for training CE practitioners.

Environmental Education in Wyoming

In 2005, WAEE, with funding provided by US EPA, Region 8, Office of Environmental Education compiled a report on the status of environmental education in Wyoming. The State's uniqueness – economy, educational system, and geography – were given careful consideration when analyzing the status of environmental education and making recommendations for improving access to EE. The report yielded significant findings and the conclusions serve as a guide for WAEE's future efforts.

Are there other options that provide the current level of services in a more efficient manner?

The current level of services is limited at this time. However there is more the WGFD can do to partner in the delivery of conservation education programming. See recommendations.

Conservation Education Conclusions and Recommendations

- Conservation education is considered crucial for an informed public and therefore the agency that serves that public. CE is a component of all state fish and wildlife agencies.
- Past decisions to reduce staffing for CE in WGFD has resulted in declines in CE programs and participation thus reducing the public's opportunity to learn about the value of Wyoming fish, wildlife, and their habitats.
- A robust CE program can increase the public's understanding and support for the WGFD's efforts to conserve Wyoming's fish and wildlife resources.
- WMI recommends that WGFD develop measurable objectives, focus, and key outcomes and metrics for WGFD conservation education programs' adopted goals. WGFD staff, Commission members, volunteers and the various publics should be able to understand what the CE program's purpose is and how well it's achieving its desired outcomes. Program delivery frequency is not a measure of progress toward an ultimate outcome. A stated purpose and measured results are required to ensure a program returns value on the investment made. For all CE efforts, the following general questions should be answered - why are we doing this program, who are we serving, what results do we seek and how do we measure our results.
- Recognize the difference between outcomes for Conservation Education and R3-related programming. The CE programs needs to develop goals, objectives and meaningful measures for results that go beyond counting the number of programs or participants. A review of agency goals (desired outcomes) will allow WGFD to build programs that assist in achieving these outcomes by creating informed constituents – adults and young people – the future decision makers and potential employees of the WGFD. While R3 efforts must be designed to specifically create a new hunter/angler or increase a hunter's/angler's activity, CE programs of state fish and wildlife agencies have the ability to create an informed and involved citizenry. Developing a set of core concepts for conservation education is critical for an agency to meet the needs of its public constituents. Specific recommendations for review by WGFD staff involved in creating core concepts, measuring outcomes, and managing Conservation Education programs would include the reports and toolkit publications accessible from www.fishwildlife.org - focus area conservation

education. One publication that might shed some light on what other states are doing is the *North American Conservation Education Strategy - Agency Examples*.

- WMI recommends that WGFD address current staff capacity issues and implement priority conservation education programs. Considering the regional emphasis of CE delivery within the WGFD, a state level coordination position is required to ensure consistency in the implementation of future statewide CE goals, and the use of program evaluation metrics.
- WMI recommends that WGFD add the discussion of the Wildlife and Sport Fish Restoration (WSFR) program to the Forever Wild Teacher Resources. For example, consider adding the WSFR story to the educator package. This eligible federal aid activity provides information about the benefits and accomplishments that WGFD produces with the funding program that has enabled professional wildlife and fisheries management in Wyoming as well as across the US. These messages, as part of an agency outreach plan, can bring additional focus to operations and outcomes across a wide array of agency efforts. Hunters, shooters, anglers and boaters all contribute to this program that funds much of what the agency does for the people of Wyoming.
- WMI recommends that WGFD increase the delivery of CE programs with the assistance of partners. There are many opportunities for the WGFD to partner with external organizations to increase the effectiveness and efficiency of its CE efforts. Examples include Wyoming Project WILD, The Wyoming Alliance for Environmental Education, and Project Learning Tree. By partnering with these groups, the WGFD has an opportunity to extend awareness of its mission and achievements (this should be a requisite of any partnership with the agency) and maximize the limited resources the agency has to commit on current and future CE programs.

Overall Financial Review

The current budget for the WGFD is approximately \$82.6 million. Of that amount 84% is derived from fish and hunting licenses, stamps, and permits and federal Wildlife and Sport Fish Restoration Programs and State Wildlife Grants. Another 9% comes from other funds and 7% is provided by the legislature (General Funds) for specific programs. These General Funds support about 21 Full Time Equivalent (FTE) employees in addition to an approximate 400 FTEs in WGFD. The WGFD and other grants have provided additional revenue for General Fund supported projects. Based on a three-year average (FY12-FY14), WGFD has directly provided about \$1.12 million per year to supplement the \$4.31 million per year from the General Fund and \$1.27 million per year from other grants.

The WGFD undergoes state level financial and programmatic audits annually. The Department of Interior’s Office of the Inspector General (on behalf of the U.S. Fish and Wildlife Service) conducts an audit of federal aid apportioned to WGFD every 5 years. The last 3 reports (audit years 2000-2002, 2005-2007, and 2010-2015)⁴³ found that WGFD “complied, in general, with applicable grant agreement provisions and requirements of the Acts, regulations, and FWS guidance.” The WGFD provided WMI very detailed financial reports that cover revenue and expenses by program and organization for a 10-year period. WGFD has extensive and comprehensive financial, programmatic, and performance tracking databases to assist WGFD administrators and Commissioners in decision-making.

Although WGFD carried a healthy Game and Fish Commission Operating Fund balance for a number of years, recent Commission action (January 2016) has committed a substantial portion of that fund. In June 2015, the fund balance was approximately \$56 million. Commission decisions allocated \$31.5 million as “reserve” funds, leaving about \$25 million for WGFD investments in the future of Wyoming fish and wildlife resources. Commissioners decided to commit up to \$15.5 million for a WGFD laboratory and regional office in Laramie (to replace existing laboratory work done by the University of Wyoming), \$2 million to be matched 1 to 1 from matching funds and donations for the Whiskey Mountain Conservation Camp, and \$5-7 million for a WGFD regional office in Cody.

In addition, the Commission is considering other uses of the \$25 million to address habitat management; conservation education; recruitment, retention, and reactivation; and wildlife disease research and risk assessment along big game migration corridors.

Develop a flowchart showing all the WGFD’s income and how it is used to operate and administer the WGFD.

The following table identifies the source of funds used to support WGFD administration and operations and the constraints placed on those funds.

(see next page)

⁴³ U.S. Department of Interior, Office of Inspector General. 2004, 2008, 2013. U.S. Fish and Wildlife Service Wildlife and Sport Fish Restoration Program Grants: Awarded to the State of Wyoming.

FY17 Projected Revenue

| PROGRAM AREA | AMOUNT | SOURCE |
|--|-----------------------|---|
| Administration of WGFD Programs | | |
| License Fees | \$38.5 million | Hunting and fishing licenses, stamps, permits |
| Interest Received | \$2.8 million | Interest from G&F Operating Fund |
| License Recoupment | \$0.8 million | Reimbursement for legislatively mandated free/reduced cost licenses |
| Boating Registration | \$0.7 million | Boat registration fees |
| Operating Cash | \$10.6 million | G&F Operating Fund |
| Administration of WGFD access programs | | |
| Access Fund | \$1.7 million | AccessYES Program – licenses, conservation stamps, donations, restitution fees, interest |
| Administration of approved projects by the U.S. Fish and Wildlife Service | | |
| Wildlife and Sport Fish Restoration Funds State Wildlife Grants | \$15.6 million | U.S. Fish and Wildlife Service approved programs – does not include: <ul style="list-style-type: none"> • <i>Law enforcement</i> • <i>License administration</i> • <i>Bird farms</i> |
| Administration of anticipated Federal Grants | \$6.0 million | NRCS Farm Bill programs, etc. |
| General Fund | \$5.9 million | Legislatively approved programs: <ul style="list-style-type: none"> • <i>Sage-grouse Management</i> • <i>Aquatic Invasive Species</i> • <i>Wolf Management</i> • <i>Veterinary Services</i> • <i>Sensitive Species</i> |
| Total Revenue | \$82.6 million | |

Show the costs of programs administered by the WGFD, but funded by non-Commission revenues.

FY 17 Projected General Fund Budget – projects administered by WGFD

| PROGRAM AREA | AMOUNT | FTEs |
|-----------------------------------|-----------------------|-------------|
| Sage-grouse Management | \$0.92 million | 2 |
| Aquatic Invasive Species | \$1.32 million | 2 |
| Wolf Management | \$0.71 million | 1 |
| Veterinary Services | \$1.85 million | 11 |
| Sensitive Species ¹ | \$1.11 million | 6 |
| Total Revenue and Expenses | \$5.91 million | 22 |

¹ Species included: Ferruginous hawks, small mammals, black-tailed prairie dogs, spotted skunks, invertebrates in FY15-FY16 funding.

Overall Financial Review Conclusions and Recommendation

- WGFD is funded primarily (approximately 93%) through hunting and fishing license sales, special permit sales, registration fees, interest earned, federal excise taxes on fishing and hunting equipment, and other federal grants.
- WGFD receives about \$6 million from the state general fund for research and management of certain species in need of conservation and aquatic invasive species.
- This funding model is similar to most other states in the nation. However, WGFD, like almost all other state fish and wildlife agencies, realize that this funding model may not be adequate to meet future conservation challenges. In spite of expanded responsibilities for all species of fish and wildlife and the habitats needed for their survival, hunters and anglers contribute the vast majority of conservation funding. This expanded mission provides value to all the citizens of Wyoming and the nonresidents who enjoy Wyoming’s fish and wildlife resources. The public values and services associated with the WGFD’s conservation work are financed by a small segment of the

population even though the state's tourism economy benefits in large measure.

- WMI did not conduct a financial audit nor did we attempt to evaluate the budget priorities of WGFD.
- The current operating fund appears to be robust and revenue projections for fiscal year 2017 are consistent with past projections indicating that the overall financial situation is adequate for current WGFD programs.
- WGFD has taken steps to create and maintain a reserve fund as a future buffer against downturns in revenue. This makes good business sense but may have forestalled advancements in certain program areas due to past budget cuts. WMI recognizes that other factors have limited program growth in addition to WGFD budget decisions. Statewide hiring caps and a downturn in the state's economy have created a political environment that was not conducive for program expansion.
- WGFD has committed to substantial infrastructure investments that will improve their wildlife disease management program and provide services to the public.
- WMI recommends that WGFD and the Commission undertake human dimensions research to measure the Wyoming public's attitudes and values towards and the economic importance of fish and wildlife resources to the state. This research could identify all citizens' expectations of WGFD with respect to fish and wildlife population abundance and distribution, habitat management and public access, sensitive species management, landscape level conservation, and more. It could inform and identify the resources necessary to meet the public's expectations and provide choices and priorities for the public to decide about resources required and resource allocation. This information may lead to enhanced approaches to funding WGFD that would reflect the true benefits of the work WGFD does for all citizens of the state.
- WMI recommends that this enhanced funding model provide long-term, sustainable funding to address current and projected conservation challenges. In addition, the model should recognize the contributions of hunters and anglers but also consider the value of public benefits accrued by all Wyoming residents and non-resident visitors to the state. The current "user pays, public-benefits" model could be enhanced by including all "users" of Wyoming's public resources.

COMMISSIONER COMMENTS AND OVERARCHING CONCLUSIONS

Commissioner Comments

WMI found that the Commissioners were well-informed, insightful, and engaged with the WGFD and program areas that we reviewed. Those Commissioners who have served on the Commission for a short period of time recognized that for some program areas, they needed to do more investigation. Those Commissioners who experienced the difficult budget reduction exercise conducted in 2011-12 recognized that their decisions had a major impact on public outreach and conservation education. To varying degrees, each of them offered support for reestablishing these programs. All Commissioners expressed high regard, respect, and praise for the expertise and work of WGFD leadership and staff.

WMI interviewed each Commissioner and ask for their comments on the 12 program areas selected for review. The following is a brief summary of how WMI perceived their comments:

- Fish hatcheries – Broad consensus that the hatchery system was well run and efficient with hard working employees. Also expressed a desire to increase fishing license fees to defray the expenses of the hatchery system. They recognized the economic importance of fish production and stocking to the economic well-being of Wyoming and its tourism industry. A few mentioned the potential importance of warmwater fisheries in the future due to the uncertain nature of and impacts due to fish diseases and climate change impacts.
- Elk feed grounds – They expressed an understanding of the need for feedgrounds because of the importance of elk herds and need to reduce conflicts between wintering elk and private landowners. All expressed a concern about the potential impacts of brucellosis to elk and livestock operations. Due to expense of the program, a few described the program as a necessary evil and important for the WGFD. However, some agreed that the feedground program indirectly produces revenue that increases the benefit: cost ratio of the program.
- Bird farms – There was strong support for the program even though the expense exceeds the revenue generated through Special Pheasant Management Stamps. This “loss leader” was recognized as a component of efforts to provide opportunities for first time hunters, especially youth. There was broad consensus that the permit fee and take provisions need to be reexamined in order to sustain the program. A few Commissioners also expressed the need to re-examine the issue of establishing a seasonal bag limit total to assure equitable distribution of hunting opportunity.
- Employee housing – All agreed that the employee housing program was beneficial and in some location essential for employee recruitment and

- retention, logistical reasons (especially in remote locations), for WGFD storage of equipment, and response and service to the public. They expressed that they have not received many complaints about the program and public support for having WGFD employees as part of local communities.
- Vehicle fleet – Commissioners recognize the need for a variety of vehicles for WGFD employees to carry out the daily work duties and have reported few public complaints about the program. Some expressed concern about the previous budget cuts’ impact on the vehicle fleet management system and vehicle replacement schedule.
 - Habitat management – All were supportive of the habitat management program and work with private landowners. One did express a concern about the amount of funding spent on habitat easements throughout the state.
 - Access for hunting and fishing – Strong agreement that these programs are essential to provide hunting and fishing opportunities. They were especially concerned about the impact of changing land ownership impacts on these opportunities. Some reported that the working relationship between WGFD staff and landowners has improved over the past 30 years.
 - Recruitment, retention, and reactivation of hunters and anglers – All recognized the importance of these efforts but some expressed concern about the lack of success. WGFD’s revived interest was noted and appreciated. Again, there was concern about the impact of budget reductions on this program.
 - Information technology – There was general agreement that WGFD has made great strides in providing IT support for the WGFD employees and the importance of this tool for public outreach and to provide public service. There was somewhat mixed support for the importance of and results associated with an increased social media effort.
 - Wyoming Wildlife magazine – There were mixed emotions about the importance of the magazine. Some were very proud of its heritage and role in plays in public information. Many thought the magazine could better serve as a tool to inform the public about the important work that WGFD does. However, most all were surprised when they found out that the great majority (approximately 70%) of subscribers were non-residents. Most offered support for increasing magazine revenue.
 - Conservation education – Commissioners expressed regret about the reduction in this program due to fiscal year 2012-13 and 2013-2014 budget cuts. All seemed to understand the importance of conservation education and a public that understands and values fish and wildlife resources and its habitat. Support was conveyed to provide enhancements to the existing program.

- Overall financial review – Commissioners understood that WMI was not tasked to conduct a financial audit of WGFD. All expressed support for the financial sustainability of WGFD. Most recognized that the public’s understanding of the current financial situation has been confused due to circumstances arising after the last budget reductions when revenues rose rather than fell as predicted. All commented that WGFD manages its finances appropriately.

Overarching Conclusions

WMI appreciates the cooperation and candor of WGFD in response to this review. Employees were responsive to WMI’s requests for extensive documentation and exhibited knowledge, expertise and dedication to their jobs and to WGFD’s mission during interviews.

WMI found the majority of the 12 program areas evaluated in this review are individually well managed and each serves an important role in accomplishing the WGFD mission. Improvements could be made in most of the program areas, but none of them stand out as being in need of major revision or elimination. WMI believes the continued controversy related to several of these program areas, and questions regarding the efficiency of WGFD, stem from a lack of overall strategic direction for the agency and from inadequate engagement with the citizens of Wyoming.

WGFD is one of the few states that adopted the Comprehensive Management System (CMS) approach offered by the U.S. Fish and Wildlife Service for program management under the Wildlife and Sport Fish Restoration program. This approach requires the state agency to develop a “strategic plan,” that defines goals and performance measures for each program in the agency. Although a CMS theoretically promotes a strategic approach, CMS plans function primarily as tools for financial management, rather than providing overall guidance for an agency.

WGFD’s current CMS Strategic Plan⁴⁴ identifies 23 different programs, for which there are a total of 48 performance measures. WMI found that most of these performance measures were output-based rather than outcome-based, and were indicators of biological elements such as number of fish stocked; number of pheasants released; numbers of elk fed; acres of habitat protected. While such

⁴⁴ Wyoming Game and Fish Department Comprehensive Management System Strategic Plan FY17-FY21. WGFD. Cheyenne. 38 pp.

measures are easy to develop through internal review of existing program direction and capacity, they address only half of the agency's mission—"Conserving Wildlife". They do not provide meaningful direction for the second part of the agency's mission – "Serving People."

To fulfill both elements of the agency mission, WGFD's goals and objectives must be established with equal consideration of agency and biological capacity and public expectation or need.

WMI noted a distinct lack of public engagement strategies and associated outcomes (e.g., public support for state land management, public opinion of wildlife management systems, public understanding and appreciation of WGFD services, etc.) within the WGFD's strategic planning documents. Outcome-based measures for the "Serving People" element of WGFD's mission, though more difficult to measure, would enable WGFD to determine the degree to which its wildlife and habitat management are reflective of the public's expectation and need.

The consequences of WGFD's reliance on performance measures for only half of the agency's mission are evident in WGFD's response to a projected budget shortfall in 2013 and the ensuing events. Faced with projected budget shortfalls in 2013, WGFD reduced its budget for Fiscal Years 2013 (3% reduction) and 2014 (6.5% reduction). When implementing these reductions, WGFD minimized budget cuts to biological and management-oriented programs, and shifted the impact disproportionately to other program areas, notably administration, conservation education, outreach, and human dimensions. This approach enabled WGFD to achieve many of the performance measures for "Conserving Wildlife" such as miles of streams surveyed, but left the agency unable to assess even rudimentary indicators of public need or support. Staff reductions in the outreach and human dimensions programs, and thus loss in public engagement expertise, were particularly crippling in this regard. Declining public awareness of, and support for, WGFD services and accomplishments is a predictable result of reduced resources and focus on public engagement.

Due to unanticipated increases in fishing license sales in 2014–2016 and the largest surge in Wildlife and Sport Fish Restoration program funds in the 75-year history of that program the budget shortfalls anticipated in 2013 did not occur. Consequently, rather than facing a fiscal crisis, WGFD developed a surplus in its operating fund. WGFD should take advantage of this opportunity to reverse the impact of the decisions that have adversely affected the agency's capacity to assess the interests of and engage with the public.

WGFD has already taken one important step in this direction through its participation at Level 2 in the America's Wildlife Values (AWV) project.⁴⁵ The AWV project will measure public values toward wildlife in all 50 states. By choosing to participate at Level 2, WGFD will be able to add specific management-related questions to the survey administered to Wyoming residents. This will give WGFD greater insight into Wyoming citizens' values in relation to specific topics.

WGFD should supplement the information gained through the AWV project with additional human dimensions research focused on some of the controversial issues that led to this review. For example, assessment of the importance of the bird farm program to all hunters, bird hunter's willingness to pay higher fees for pheasant hunting, or the need for a cap on the total number of stocked birds a hunter can take per year would enable WGFD to develop measures related to how this program serves bird hunters and other citizens. Fortunately, human dimension research can provide effective tools to assess public opinions on complex natural resource management issues such as these. For example, the North American Waterfowl Management Plan uses forced choice survey models to assess waterfowl hunters' knowledge, preferences (e.g., driving distance to hunting areas vs. hunter pressure vs. odds of limiting out), and levels of use and support for waterfowl and wetlands conservation. Similar work has been done in Minnesota with walleye anglers⁴⁶.

Similarly structures surveys and research could be used to:

1. Inform the agency about the degree to which WGFD is meeting the expectations of and serving anglers through the hatchery program.
2. Understand how the discovery of CWD in feedgrounds elk would affect hunters' willingness to continue pursuit of elk in those herd units could inform WGFD's CWD plan.
3. Determine the public's awareness of and support for WGFD's habitat conservation efforts or work to protect migration corridors (this could not only inform the agency about how much the public is aware of these vital efforts, but also lay the groundwork for broader public support for the agency)
4. Understand the public's interest in hard copy versus online publication of Wyoming Wildlife or topics of interest for conservation education programs

⁴⁵ See: <http://www.wildlifevalues.org/>

⁴⁶ Carlin, C., Schroeder, S. A., and Fulton, D.C. In Press. Site choice among Minnesota walleye anglers: The influence of resource conditions, regulations and catch orientation on lake preference. *North American Journal of Fisheries Management*.

and thus enable WGFD to make informed decisions about program direction as they re-build capacity in these areas.

5. Inform and measure the public's support for WGFD's programs and the benefits that accrue to all Wyoming residents, thus assist in enhancing the current funding model that supports WGFD.

Data collected on these and other topics, using accepted human dimension research techniques, would allow the WGFD to not only engage their stakeholders, but also secure quantifiable public preferences and values that can inform and assess the agency's future strategic objectives for public engagement.

In addition to the above human dimensions inquiries, WGFD should explore additional ways to engage the public in program decision-making. Like most state wildlife agencies, WGFD has often relied on public meetings as a way to interact with citizens, in spite of the known limitations of this process to effectively and accurately represent the public's values and opinions.⁴⁷ Task forces or other forms of stakeholder working groups that engage a broad range of people and create an environment where competing interests must engage with each other and the agency in problem solving rather than simply lobbying for their preferred outcome are increasingly being used by state agencies to address the controversial issues these agencies face. WMI is aware of several states' strategic planning processes built on this model and would be willing to make further recommendations to WGFD in this area if requested.

Through an increased focus on human dimensions inquiry and improved public engagement, WGFD can not only gain better insight into what its public wants, it can build greater confidence in the public that the agency is indeed, "Conserving Wildlife – Serving People."

⁴⁷ Peterson, C.C and T.A. Messmer. 2010. Can public meetings accurately reflect public attitudes toward wildlife management? *JWM* 74(7):1588-1594.

APPENDIX A. Statement of Work

PROJECT SPECIFICATIONS AND REQUIREMENTS

1. RESPONSIBILITIES OF PROPOSER [CONTRACTOR]:

1.1 OBJECTIVES: The Contractor shall provide an unbiased evaluation of Agency programs.

1.2 REQUIREMENTS

1) Hatcheries: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

2) Feedgrounds: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency?

What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

3) Bird Farms: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

4) Employee Housing: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and

objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

5) Vehicle Fleet: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

6) Habitat: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner? Identify projects done by WGFD alone, in partnership with other entities, or by other entities not in partnership with WGFD that do not benefit wildlife or the hunting, trapping or fishing public.

7) Access for Hunting and Fishing: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner? How is public access linked to recruitment, retention, and reactivation of hunters and anglers? What percentage of state owned lands (Office of State Lands and Investment and Wyoming Game and Fish Commission) are open to public hunting, fishing, and/or trapping?

8) Recruitment, Retention and Reactivation of Hunters and Anglers: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How

are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

9) Information Technology: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

10) Wyoming Wildlife Magazine: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

11) Conservation Education: When and why this program was originally established? What substantive changes have occurred since that time? What are the goals and objectives of the program? How are the goals and objectives determined and evaluated, and at what frequency? What is done to explore increasing revenue generated by this program? Can this program be combined with others to increase efficiency? What are the wildlife, public, and economic benefits provided by this program? Are there other options that provide the current level of services in a more efficient manner?

12) Overall Financial Review: Develop a flowchart showing all the WGFD's income (e.g. federal, state, department generated, trusts, etc.). Show the flow of income and how it is used to operate and administer the WGFD. Also show the costs of programs administered by WGFD, but funded by non-Commission revenues (e.g., Wyoming State General Funds).

APPENDIX B. Documents and files provided to WMI by WGFD

ACCESS FOR HUNTING AND FISHING

2001 PLPW Report-Landowner survey.doc
Access-PLPW Work Schedules
FY15 Work Schedules
Countryman-PLPW.xlsx
Cover-PLPW.docx
Sherwood FY15.xlsx
Smith-PLPW.xlsx
Withroder-PLPW.xlsx
FY16 Work Schedules
FY16 Work Schedule - Dan Smith-Cody.xlsx
Fy16 work schedule-Countryman-GrRiver.xlsx
FY16 work schedule-Tobiasson-Sheridan.xlsx
FY16 work schedule-Withroder-Casper.xlsx
PLPW summary.xlsx
Sherwood FY16.xlsx
Access_Fish_ShoshoneRiverAccessDevelopmentPlan.pdf
Acquisition
Access Acquisitions FY11-FY16.xlsx
Acquisition Public Survey.docx
Acquisition Funding Partnerships.docx
FY 14 WGFD External Survey Results.pdf
FY14 Habitat & Access Annual Report for USFWS.docx
FY15 Habitat & Access Annual Report for USFWS.docx
Habitat Access Branch History 2015.doc
Habitat Access Branch responsibilities.doc
Habitat_Access_Branch_Regions2016.pdf
StateTrustLandsPublicUse.PDF
StatewideAreasAndFacilities.pdf

BIRD FARMS

4 Bird Farms.pdf
birdfarmhistory.doc
Springer_Summary 2014.xlsx

CONSERVATION EDUCATION

2012_OREO_Workshop_Pre-Post_Survey_Results.pdf
2013 Con Ed R3 Program Review.docx
Calendar.pdf
Conserv. Ed Volunteer FY16 Budget.pdf
FWER LessonPlans Outline.docx

FWER-CommissionInfo.docx
Hunter Ed FY16 Budget.pdf
WGFD_AdoptionModel_4_22_14.jpg
Work hours for FY15 Hunter Ed, Conservation Ed, Forever Wild Families.xlsx
Wyoming Game and Fish Department Education and Outreach Performance Measures.docx

ELK FEEDGROUNDS

2005 BRUCELLOSIS_COORD_TEAM_REPORT.pdf
5 Feedgrounds.pdf
Brucellosis Feedgrounds 2004.pdf
Feedground location Map.pdf

EMPLOYEE HOUSING

3 Department Housing.pdf
Cap Con - Deferred Maint Worksheet.xlsx
Housing
Dept provided housing-Special report Jan 1999.pdf
Housing Evals
Evaluation Rating Scale.doc
Example Housing Eval-Cody 637 Circle Drive
cody2narr.doc
Condition form.xls
Cover.pub
DEPARTMENT HOUSING INSPECTION REPORT.doc
Game and Fish Checklist.xls
Photos.doc
Summary.doc
Letterhead2.doc
Proposal-Housing Evaluations March 2004.pdf
Schedule.xls
TABLEKEY.xls
Housing-Warden-Hatchery Final_no_recomm.pptx
Warden Housing Study April 16, 2004.pdf
Housing_FishCulture_24 HOUR COST SUMMARY.docx
Housing_FishCulture_HatcheryHousingEvaluationForm.pdf
Housing_FishCulture_HousingAtHatcheries_NationalOverview_Barnes_2010_WAS.pdf
Housing_FishCulture_MemoCostToNotHaveHousing.doc
Housing_FishCulture_MemoReasonsToProvideHatcheryHousing.pdf
Housing_LSO Employee Provided Housing Summary.pdf

Fish Hatcheries

FishCulture_10YrPlan_FY13to22_April_2015.pdf
FishCulture_BrownTroutBroodStockManagementPlan.pdf
FishCulture_DiseaseControlAndManagement.pdf

FishCulture_DuboisOperationsManual.pdf
FishCulture_Efficiencies.docx
FishCulture_Hatcheries_DuboisRecirculatingDripIncubatorStudy.pdf
FishCulture_Hatcheries_FishScheduleProcess.pdf
FishCulture_Hatcheries_IsolationFacilityProcedureExample.pdf
FishCulture_HatcheryProgramEval_CommisionBig6report.pdf
FishCulture_HistoryOfWGF_HatcherySystemAndTenSleep_Report.pdf
FishCulture_Policy_7C Fish Stocking WGFC Policy VII C 042898.pdf
FishCulture_ResponsesToWMIquestions.docx
FishCulture_Wyoming Hatchery WMI Audit_PowerPoint.pdf
FishCultureExpenditures_FY06toFY15.pdf
FishDivision_FutureNeedsMemo_Aug2015.pdf
FishDivision_OrgChart.pdf

HABITAT

2013_Progress_Report.pdf
2014 Strategic Habitat Plan Annual Report.pdf
Acquisition
Acquisition Public Survey.docx
Acquisition Funding Partnerships.docx
Habitat Acquisitions FY11-FY15.xlsx
Barrier_Final2.docx
EconomicContributions_WWNRT_sm.pdf
FY 14 WGFD External Survey Results.pdf
FY 15 WGFD External Survey Results.pdf
FY14 Habitat & Access Annual Report for USFWS.docx
FY15 Habitat & Access Annual Report for USFWS.docx
Habitat Access Branch History 2015.doc
Habitat Access Branch responsibilities.doc
Habitat_Access_Branch_Regions2016.pdf
Habitat_Aquatic_KendrickDiversionPoster_AllSpeciesFishPassage.pdf
Habitat_Aquatic_ProgramEvaluation_ResponsesToWMIquestions.docx
Habitat_Aquatic_ProgramEvaluation_ResponsesToWMIquestions_PostInterview.docx
Habitat_Aquatic_WWNRT_HarmonyDiversionProposal.docx
MRCDesign.pdf
Oct2009summary.doc
Project_Process.pptx
Strategic Habitat Plan.pdf
WGFD_Habitat_ResourcesAndLinks.docx

INFORMATION TECHNOLOGY

30 FY15 ITGIS (Strategic Plan).docx
3A_Org Chart-IT.pdf

3B_ETS Functional Org Chart.pdf
EXTERNAL CUSTOMER SATISFACTION SURVEY
FY 13 External Survey Summary.pdf
FY 14 External Survey Results.pdf
FY 15 External Survey Results.pdf
FY14 External Survey Questionnaire.pdf
Five year Plan for Enterprise GIS Development FY07 200605.doc
IT AUDIT
2015 IT Audit Findings.pdf
Audit Questionnaire & Index .pdf
Q1-6_Information Technology System Understanding
1_Risk_Assesment.pdf
2_Financial Systems Software.pdf
3_Additional_IT_Information.pdf
4A_Org Chart - IT.pdf
4B_ETS Staff Org Chart.pdf
5A_FY13 IT GIS Strategic Plan.pdf
5B_20140130-ITOCMinutes.pdf
6_Planned IT Changes_FiscalSystems.pdf
Q15-20_Data Backup and Recovery
15_Operations_Standards
Building a New Image.pdf
Computer Maintenance Checklist.pdf
Creating New Users.pdf
Deploying an Image.pdf
ETS Service Delivery Contact List.pdf
firewall_change_request.pdf
FTP.pdf
gfhelp.pdf
gfmemo.pdf
Hatcheries Phone List.pdf
Hatchery PC Configuration.pdf
How to Transfer an Employee.pdf
Network Access While Travel.pdf
Rollout Protocol.pdf
Setting up Video Conference Equipment.pdf
UserGuideCMS.pdf
WGFD New Employee Form.pdf
Wiping Old Drives.pdf
WSUS Setup.pdf
16_Operation Logs

Apt-listchanges_changelogs for WGFTACACS1.pdf
Backup_Job_Summary.pdf
Daily Report_Server File Changes.pdf
Remote router config diffs.pdf
Switches router config diffs.pdf
17_Efficiency_Reports_SQL
WGFSQLFARMELS_2013.pdf
WGFSQLFARMELS_2014.pdf
WGFSQLFARMINTER_2013.pdf
WGFSQLFARMINTER_2014.pdf
WGFSQLFARMINTRA_2013.pdf
WGFSQLFARMINTRA_2014.pdf
17_Efficiency_Reports_Web
WGFWEBFARM01_2013.pdf
WGFWEBFARM01_2014.pdf
WGFWEBFARM02_2013.pdf
WGFWEBFARM02_2014.pdf
WGFWEBFARM03_2013.pdf
WGFWEBFARM03_2014.pdf
18_Reconciliation_Reports.pdf
19_Business Continuity Plan.pdf
19_Disaster_recovery_tests.pdf
19_Offsite Storage.pdf
19_WGFD Crisis_Guidelines_Flip_Chart_07-2013.pdf
20_Encryption.pdf
Q21_New or Significantly Modified Accounting System
21_New_or_Modified_Accounting_Systems.pdf
Q22-23_Incident Response Plan
22_Incident_Response_Plan.pdf
23_ApplicationLogsMonitoring.pdf
Q24-26_Network Documentation
24_GFNetwork-April 2014.pdf
25_Monitoring - 2014.pdf
26_Antivirus_config.PNG
Q27-32_Service Organization Controls
27-32_Not applicable.pdf
Q7-14_IT General Controls Assessment
10_Access_by_Level_IT_Server_Room.pdf
10_All_Door_Keys.pdf
10_IT_Server_Room_Access_Levels_by_Reader.pdf
10_Password_Administration_Process.pdf

10A_Server_Room_Access_Events_Aprill_2014.pdf
10B--ELS Password Administration Process.pdf
11A_User_Access_Security_Financial_Systems.pdf
11B--ELS User Access Security Options.pdf
12a_Active_Contract_Temp_Emps.pdf
12b_Active_Permanent_Emps.pdf
13a_Terminated_Contract_Temp_Emps.pdf
13b_Terminated_Permanent_Emps.pdf
14a_NewHire_Contract_Temp_Emps.pdf
14b_NewHire_Permanent_Emps.pdf
7a_sup_SystemsDev_Evolutionary_Approach_to_Software_Development_Diagram.pdf
7a_SystemsDev_Programming_Standards_Manual.pdf
7b_WGFD_New_Systems.pdf
7c_Procedures_for_Implementing_New_Systems.pdf
8a&b_CEP_Software_Upgrade_Change_Management.pdf
8c_Application_Change_Management.pdf
9_Logical_and_Physical_Security.pdf
State IT Policies
02100-G010GuidelinesforUseofSocialMediaRev2013-10-01final.pdf
02100-P010SocialMediaUsagePolicyRev2013-10-01final.pdf
10100-P110ITPoliciesStandardsProceduresGuidelines.pdf
10200-P020-MobileDevicesforGoogleApps.pdf
1100-P141-InfoSecurityAwareness_and_Training-NEW.pdf
1200-P143-InternetAcceptableUse.pdf
3100-G010-ITChangeMgt.pdf
3100-P010-ITChangeMgtOversight.pdf
3100-P160-Communications_and_OperationsMgt-NEW.pdf
3200-G161-MaliciousCodePreventionGuideline.pdf
3200-P161-MaliciousCodePrevention.pdf
3200-P163-NetworkSecurityManagement.pdf
3300-P010-WebDomainNamingPolicy.pdf
3400-P010-EmailPolicy.pdf
3400-P011-ElectronicMailManagement.pdf
3400-P012 - Use of Mobile Devices for Synchronizing to Google Apps.pdf
3400-S010 Email Management Standards.pdf
3500-P010-WebADACompliancePolicy.pdf
3500-P011-WebsiteAdvertisingPolicy.pdf
3500-P012-WebBrowserSupportPolicy.pdf
3500-P013-WebCookieUsePolicy.pdf
3500-P014-WebGraphicsandMultimediaPolicy.pdf
3500-P016WebsiteOnlineMapsDataDisclaimer.pdf

3500-P132-PrivacyPolicy.pdf
3500-S011-AdvertisingDisclaimerLanguageStandard.pdf
3500-S012-WebStandards.pdf
3600-P010_Directory_Service_Policy.pdf
4100-P130-ResponsibilityforITResources.pdf
6100-P301-ContractWarrantyPeriod.pdf
6100-S301-ContractWarrantyPeriodStandard.pdf
7100-P211-PolicyTechnicalCompliance.pdf
7200-P010-PCI-DSSCompliance.pdf
8100-G131-GuidelinesforHandlingSensitive-ClassifiedRecords.pdf
8100-P131InformationClassification.pdf
8100-P166-DataProtectionforElectronicGovernmentServices.pdf
8100-S131-InformationClassification.pdf
8300-G010-InfoRecordDecisionTree.pdf
8300-P162-BackupStorageRestoration.pdf
9100-P150-PhysicalSecurityofITResources.pdf
9200-P121-ThirdPartySecurity.pdf
9300-P010-WebSSLCertificateUsePolicy.pdf
9300-P168-SecurityControlsforIM.pdf
9400-G1-191_IncidentResponseBasicSkillsGuideline.pdf
9400-G164-PrepofElectronicDevices_and_MediaforDisposal.pdf
9400-G2-191_IncidentPrecursorsandIndicatorsGuideline.pdf
9400-G3-191_SecurityIncidentDeclarationGuideline.pdf
9400-G4-191_IncidentResponsePrioritizationGuideline.pdf
9400-P164-PrepofElectronicDevices_and_MediaforDisposal.pdf
9400-P167-ITResourceMonitoring.pdf
9400-P170 User Access Management.pdf
9400-P173 Logical Access Controls on IT Resources.pdf
9400-P174 Network Connections & Management.pdf
9400-P175 Mobile Computing & Telework.pdf
9400-P180InformationSecurityintheSystemLifecycle.pdf
9400-P183 Technical Vulnerability Management.pdf
9400-P190-ReportingSecurityEvents_and_Vulnerabilities.pdf
9400-P191_InformationSecurityIncidentManagement Policy.pdf
9400-P200-InformationSecurityPlanning.pdf
9400-P210-CompliancewithLegalRequirements.pdf
9400-S170-PasswordStandards.pdf
9400-S174-WirelessAccessPointNamingConvention.pdf
9400-S175ADPrivilegedAccessStandard.pdf
9400-S176_Automatic-Screen-Lock-StandardRev130320.pdf
9400-S191_SecurityIncidentResponseStandard.pdf

ITOC Roles & Responsibilities.docx
ITOC_Priority Needs_ 10212015.xlsx
MT 5-Year PC Cycle v2 7-11-2002.doc
SD - Supported Applications_20151022.xlsx
Summary of Department Enterprise GIS Program Efforts.doc

OVERALL FINANCIAL REVIEW

% of budgets expended.pptx
15June_cash_asset_liability_schedule_Fund balances.pdf
EXPENDITURE IMPACTS OUTSIDE OF WGFC CONTROL
DAMAGE CLAIMS & LANDOWNER COUPON PAYMENTS
5-YR land coup vs. damage claims.xlsx
Final Damage Claim FY14.pdf
PAYROLL CHANGES 2004-2012
10 Selected Employees.xlsx
LEGISLATIVE ACTIONS RESULTING IN INCREASE PERSONNEL COSTS.docx
Total Personnel costs 04-12.xlsx
Follow-up items-ALL-from May 2015 meeting.pptx
FY15_Distribution of Revenue by Fund.xlsx
PR-DJ authorized activities by USFWS FAIMS code.pdf
WGFC Informational Presentation_051215.pptx
WGFC Licensing.pptx

RECRUITMENT, RETENTION AND REACTIVATION OF HUNTERS AND ANGLERS

2013 Con Ed R3 Program Review.docx
AdoptionModel_12_1_14.jpg
BaselineTrendReport_12_20_2013_V15.pdf
CAHSS National Plan Strategic Framework _Draft_October2014.pdf
Forever Wild Family FY16budget.pdf
FY16_R3_FWFproject_10_23_15.docx
HuntingandFishingParticipationMatrix9_14_15.xlsx
HuntingFishingParticipationScorecard_finaldraft_9_14_15.docx
Immediate Recommendations_9_14_15_V3.docx
Notes from June WBCC Mtg_FINAL.docx
powderhook_stringofpearls_aggregation_081415 (1).pdf
Powerpoint_graphic1_border.jpg
untitled folder
WGFD_AdoptionModel_4_22_14.jpg
Work hours for FY15 Hunter Ed, Conservation Ed, Forever Wild Families.xlsx

VEHICLE FLEET

2008 Vehicle review.doc
2008 Vehicle Specification Review.docx
COMMISSION POLICIES

3C Volunteers WGFC Policy III C 11-13-14.pdf
3G Ride-Along Program WGFC Policy III G 091009.pdf
5B Vehicle Use WGFC Policy V B 09-18-2014.pdf
5G Domestic Animals WGFC Policy V G 09-18-2014.pdf
FY15 Vehicle Purchase Cost with Trade In.pdf
FY16 Vehicle Budget.pdf
Number of Vehicles by Class.pdf
Vehicle budgeting figures.xlsx
Vehicle Operating Costs.pdf
Vehicle rates per mile by class.xlsx

WGFD_STRATEGICPLAN_FY12FY160005663.pdf

WYOMING WILDLIFE MAGAZINE

Brief history of Game and Fish publications department +magazine subscriber graph.docx
Calendar.pdf
FY 15 WY Wildlife Mag Hours.xlsx
FY15 magazine print orders.pdf
Magazine Comparison 2013.xlsx
Magazine FY 2014 Overview.docx
Magazine overview with stated magazine history and goals.docx
Overview of publications section efficiencies FY14.pdf
Wyoming Wildlife Magazine FY16 expense budget includes postage.pdf

APPENDIX C. Biographies of Review Participants

Steven Williams. Ph.D. - WMI President - Project Manager

Dr. Steven Williams is the President of the Wildlife Management Institute (WMI). As President of WMI, Steve serves on the Board of Directors of the National Fish and Wildlife Foundation, American Wildlife Conservation Partners, Wildlife and Hunting Heritage Conservation Council (a federal advisory committee to the Secretaries of Interior and Agriculture), Council to Advance Hunting and Shooting Sports, and Chair of the National Conservation Leadership Institute. He is a professional member of the Boone and Crockett Club and The Wildlife Society.

Prior to joining WMI, Steve served as Director of the U. S. Fish and Wildlife, the Kansas Governor's Cabinet Secretary of the Department of Wildlife and Parks, Deputy Executive Director of the Pennsylvania Game Commission, and Assistant Director for Wildlife and Deer Project Leader of the Massachusetts Division of Fisheries and Wildlife. He received his B.S. and Ph.D. Degrees from The Pennsylvania State University and a M.S. Degree from the University of North Dakota.

Scot Williamson – WMI Vice President and Northeast Field Representative

Scot Williamson is Vice President of the Wildlife Management Institute. Scot has been with WMI since 1994 and has assisted Northeastern states and conservation groups on a number of wildlife and land management initiatives. The WMI publication, “Feeding Wildlife, Just Say No!” was authored by Scot and received the Wildlife Society Conservation Education Award in 2003. Scot’s current duties include coordination of multi-state habitat conservation initiatives dedicated to conservation and restoration of shrubland-dependent wildlife, and advancement of landscape level science collaboratives (Landscape Conservation Cooperatives).

Prior to joining WMI, Scot was Big Game Director for Texas Parks and Wildlife Department and White-tailed Deer Project Leader for NH Fish and Game Department. Scot received a MS in Wildlife Science from the University of Vermont and a Bachelor of Science in Forestry from the Pennsylvania State University.

Christian Smith, CWB - WMI Western Field Representative

Chris Smith is the Western Field Representative for the Wildlife Management

Institute. Chris has over 34 years experience in planning, management, research, supervision and administration of resource conservation programs throughout Alaska and Montana. He has extensive involvement with the Association of Fish and Wildlife Agencies, Western Association of Fish and Wildlife Agencies and inter-agency teams. Chris has specialized training and experience in wildlife policy and law, public involvement, conflict resolution, personnel management, and strategic planning.

Prior to joining WMI, Chris served as Deputy Director for the Montana Department of Fish, Wildlife, and Parks for 11 years. Prior to working in Montana, Chris worked for the Alaska Department of Fish and Game. In his 23 years working for Alaska, he rose from Fisheries Technician to Assistant Director of the Division of Wildlife Conservation. Chris holds a B.S. Degree in Wildlife Management from the University of Alaska and a M.S. Degree in Wildlife Biology from the University of British Columbia.

Jonathan Gassett, Ph.D. – WMI Southeastern Field Representative

Jon Gassett served as Commissioner for the Kentucky Department of Fish and Wildlife Resources (KDFWR), for 8 years. As Commissioner, he provided general supervision and control of all activities, functions, appointments, and employees of the Kentucky Department of Fish and Wildlife Resources. Primary responsibilities include oversight of all agency divisions including, but not limited to, strategic planning, personnel management, program oversight, budget development and tracking, and statutory, regulatory, and policy development. Prior to his appointment as Commissioner, Jon served as Wildlife Division Director (4 years) and Big Game Coordinator (2 years) with the KDFWR. Jon has served as President of the Midwest Association of Fish and Wildlife Agencies, the Southeastern Association of Fish and Wildlife Agencies, and the Association of Fish and Wildlife Agencies, and has chaired numerous committees in all three Associations. Jon serves on the Board of Directors of the National Conservation Leadership Institute, and the Northern Bobwhite Conservation Initiative.

Jon is a graduate of the inaugural class of the National Conservation Leadership Institute and holds a Ph.D. and M.S Degrees in Forest Resources from the University of Georgia and a B.S. Degree in Biology from Kennesaw State University.

Jon Gassett will conduct document review and analysis, staff interviews, and report drafting with an emphasis on agency administration, strategic and operational planning, and specific program evaluation.

Matthew Dunfee – WMI Projects Manager

Matt Dunfee is the Programs Manager for the Wildlife Management Institute. In his past and current positions with WMI, he has served as the Conservation Program Specialist in WMI's Washington D.C. Headquarters where he worked on numerous projects related to North American wildlife conservation, private lands programs, and hunting heritage. He also serves as the Director of the Chronic Wasting Disease Alliance, the Project Coordinator for the North American Hunting Heritage Action Plan, and the Chair of the North American Wildlife and Natural Resources Conference, and Co-Chair of the National Hunting and Shooting Sports Action Plan. In his current roles, Matt serves on numerous professional committees and boards including the AFWA Fish and Wildlife Health Committee, national and regional AFWA Hunting and Shooting Sports Participation Committees, the Hunting Heritage Steering Committee, the Conservation Leaders for Tomorrow Advisory Committee, the North American Wildlife and Natural Resources Meeting Steering Committee, and the International Hunter Education Association Standards Committee. Following his leadership in developing evaluation toolkits for hunter and shooter R3 efforts, Matt has conducted numerous multi-day training and information workshops for state and federal wildlife agency staff and administrators on R3 strategies, program development, evaluation, and best practices.

Previous to his work with WMI, Matt worked as a program coordinator for the Center for Environmental Management on Military Lands and research associate with the National Park Service's Bison Management Working Group. He received his B.S. in Fish, Wildlife, and Conservation Biology from Colorado State University.

Matt Dunfee will conduct document review and analysis, staff interviews, and report drafting with an emphasis on information technology and hunter recruitment, retention and reactivation.

Pat Ruble – WMI Midwest Field Representative

Pat Ruble is the Midwest Field Representative of the Wildlife Management Institute. In this position, Pat fosters sound, professional, science-driven wildlife management in the 12-state Midwest region and the nation by interacting with state and federal resource management agency staff, assisting with administration of programs and grants, monitoring and providing input on legislation affecting natural resources, participating on committees that foster education and development of future

wildlife professionals, serving on committees that plan/deliver on-the-ground conservation programs and projects.

Immediately prior to joining WMI, Pat was Director of Government Relations for the Archery Trade Association and Program Coordinator at the Terrestrial Wildlife Ecology Lab at Ohio State University. Pat served the Ohio Division of Wildlife as a farmland research biologist, regional assistant wildlife management supervisor, and statewide program manager overseeing public lands management, research and federal aid. During last 21 years of his career at the Ohio Division of Wildlife, Pat was the Executive Administrator overseeing the agency's wildlife management and research program. Pat holds B.S. and M.S. Degrees in Wildlife Management from the Ohio State University.

Pat Ruble will conduct document review and analysis, staff interviews, and report drafting with an emphasis on agency administrative and operational programs.

Judy Stokes Weber – Conservation Education Consultant

Judy Stokes Weber is an experienced agency executive specializing in communications. She worked for a combined 34 years with the New Hampshire Parks and Recreation and Fish and Game agencies as a public involvement expert, agency spokesperson and public affairs administrator. Judy is widely experienced managing crisis communications, agency communication and education programming, public involvement for policy making, change management, strategic planning, and relationship building through communication.

Judy has earned accreditation from the Public Relations Society of America—a mark of distinction for public relations professionals who are selected based on their broad knowledge, strategic perspective, and sound professional judgment and for demonstrating commitment to the Society's ideals of professionalism and ethical practice. She has a successful track record in controversial local and national issues laying the communications groundwork for successful conservation programs.

She has established an ongoing private practice in consultation providing services as a meeting manager/facilitator, trainer and public relations consultant specializing in conservation and environmental education. Clients include local projects such as a meeting related to the N.H. Environmental Literacy Plan, citizen input into N.H. game management planning, regional strategy development for Paddlefish related to CITES treaty impacts on the fishery in the greater Mississippi River Basin; coordinating a national research project and continuing communication efforts related to the North American Conservation Education Strategy; communication

planning training for the Region 5 Office of the US Fish and Wildlife Service, training for the AFWA – Management Assistance Team leadership program, and coordination of the development of a regional self-help website with stakeholders to address wildlife conflict abatement around the home.

Judy Stokes Weber holds a B.A. in Psychology from the University of New Hampshire and an M.S. in Communication Management from Syracuse University, where her Capstone research addressed reputation measurement and management in state conservation agencies. Judy Weber will conduct document review and analysis, staff interviews, and report drafting with an emphasis on information technology, conservation education, and public outreach through conservation information and education media such as the *Wyoming Wildlife* magazine.