

Arizona Game and Fish Department

Wildlife Management Line of Business

An asset management approach to investing in the conservation and protection of Arizona's fish and wildlife and their habitats



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Executive Summary

I. Executive Overview and Purpose

Arizona Game and Fish Department's (AGFD or Department) Wildlife Management Line of Business (LOB) Plan describes the suite of conservation-related products and services that *collectively* fulfill the statutory mandates of the agency as well as the needs and interests of its constituents—people that are aware of, appreciate, understand, and participate in and/or support products and services that help to ensure healthy and sustainable fish and wildlife populations and quality of life for all that benefit from their existence. These products and services include healthy native fish and wildlife populations, clean air and water, biodiversity, accessible open spaces to enjoy the outdoors, and many other wildlife-related services that contribute to enhanced quality of life for Arizonans.

The Department is unique among Arizona government agencies because it receives no general fund tax dollars and must rely upon an entrepreneurial model to fund operations and meet its mission and accompanying trust responsibilities to Arizona citizens. Accordingly, the Department operates like a business and continues to promote an entrepreneurial spirit to shape the development of its products and services. Our entrepreneurial model enables us to conserve and manage Arizona's wildlife resources in trust for the citizens of Arizona and help ensure that the state's sovereignty and best interests are well-served. In addition to meeting customer demands by providing products and services, we also develop private-public partnerships to increase program capacity, funding and recreational opportunities for the public. All four Divisions and associated work units within the organizational structure of AGFD operationally embrace and reflect two primary lines of business: the Wildlife Recreation and Wildlife Management LOB. This Wildlife Management LOB plan follows development of the Wildlife Recreation LOB plan, and is developed to both complement and provide necessary operational focus to support strategic deployment of both lines of business.

The Terrestrial and Aquatic Programs within Wildlife Management Division comprise the major organizational elements of the Wildlife Management LOB. This LOB plan further incorporates other organizational work units, including (but not limited to) Habitat, Research, and Wildlife Contracts, which provide essential support functions to these two primary programs and operational deployment of line of business strategies. Development and implementation of the Arizona Conservation Strategy (and accompanying wildlife data warehouse) also serves as a primary foundation for the Wildlife Management LOB, and is included with other administrative support functions/branches in establishing strategic goals and objectives under this LOB plan.

In developing its Wildlife Management LOB, the Department must evaluate its operations in terms of key business products and services and ensure that the organization and operations are effectively aligned and focused to achieve its business goals and strategies. The entrepreneurial model requires that the Department reinvest in its lines of business to meet customer expectations and secure its business model to address the existing and emerging complex challenges associated with managing Arizona's wildlife and habitats.

- AGFD's Wildlife Management LOB Plan is intended to:
 - implement a continuous improvement model (plan, do, check, adjust) to ensure Wildlife Management LOB activities are forward thinking and evolve based on emerging priorities and lessons learned;
 - identify significant issues that will affect AGFD's wildlife-centric services in the next decade and beyond;
 - incorporate an asset management approach;

- articulate a set of strategies, i.e., shorter term work plan, that includes actions to address these issues;
- align with existing organizational plans and strategies;
- support the recognition that natural resources are natural capital, and include living organisms, non-living components, such as air, water, and soil, ecosystems and habitats, and the services they provide. Natural capital is an asset that requires active management to retain its function and value.
- represent the core products and programs integral to achieving the mission, vision, and goals for wildlife management; and
- be used by AGFD leaders to direct and oversee operational performance, including planning, implementation, evaluation, and adaptation of wildlife programs.

Wildlife 20/20, the Department's strategic plan, provides overarching guidance to agency operations and drives the Wildlife Recreation and Wildlife Management lines of business. This strategic plan further guides agency annual operational goals and accompanying key measures for gauging progress. Wildlife-related strategies in the agency's strategic plan and other associated "conserve and protect" conservation strategies are appropriately aligned to the Wildlife Management LOB.

Development and implementation of the Wildlife Management LOB includes:

- understanding the environment in which AGFD delivers, and will continue to deliver, its wildlife management products and services;
- identifying issues that will affect the LOB and ascertaining root causes;
- analyzing a range of potential solutions to address both key stressors and threats to Arizona's fish and wildlife populations and their habitats and the ability of AGFD to achieve desired outcomes;
- developing a cost model at the services level and forecasting demand, revenue, and capacity;
- documenting the planning process and recommendations;
- engaging the public in the development, delivery and ongoing evaluation of the LOB; and
- developing metrics to evaluate success in tracking implementation of recommendations.

II. Our Mantra—Conserve and Protect

The Department seeks to conserve and protect Arizona’s wildlife for everyone to appreciate and enjoy. The Department is guided by the North American Model of Wildlife Conservation—developed, in large part, by the forward-thinking early conservationists who understood the need to conserve wildlife and their habitats. As the world’s most successful conservation model, it helps to sustain wildlife species and habitats through well-founded science and active management primarily supported through established “user-pay” funding mechanisms.

In executing its mission through its “conserve and protect” operational focus, the Department seeks to provide effective and sound management to benefit Arizona’s diverse wildlife resources while jointly promoting opportunities to a growing public that derives equally varied benefits from these wildlife resources. Examples of ongoing conservation efforts include creating safe passage for bighorn sheep and elk that bypass major state highways, reestablishing the California condor and Gould’s turkey populations in Arizona, determining suitable relocation habitats for Sonoran pronghorn, and expanding the range of native fish species in our state. By effectively deploying the “conserve and protect” operating focus and philosophy, AGFD prioritizes and directs limited operational resources to conserving and protecting Arizona’s wildlife and the habitats upon which they depend; and in the process, works collaboratively with customers and key conservation partners to ensure accessibility to healthy fish and wildlife habitats for all Arizonans.

The Department achieves its conservation and protection philosophy through an adaptive management approach and a Wildlife Management LOB that has the following goals and strategies:

- Wildlife management and land conservation
 - Manage populations using science-based techniques and technology.
 - Manage populations to provide diverse hunting, fishing, and wildlife recreation.
 - Ensure wildlife is abundant and in balance with competing societal expectations.
 - Conserve native wildlife diversity, and reduce impacts of invasive species.
 - Develop wildlife and fishery disease surveillance and response processes.
 - Actively respond to detected wildlife and fishery disease or extensive die-off cases.
 - Conserve habitat and water.
 - Enhance the capacity of habitat to support wildlife and enhance resilience to climate stressors.
 - Implement habitat and population enhancements.
- Public engagement
 - Ensure broad-based public input into hunt guidelines and recommendations, and Commission Orders.
 - Manage human-wildlife conflicts.
- Authority
 - Retain the Department’s wildlife management authority.
- Funding and economics
 - Explore additional mechanisms to increase and diversify funding for wildlife conservation.
 - Enhance understanding of wildlife recreation as an economic driver in many Arizona communities.

III. The Seven Sublines of Business and Their Desired Outcomes

- I. **Wildlife Enhancement** is the core of the Wildlife Management LOB. It includes all aspects of active management intended to provide sustainable wildlife populations, including species of conservation priority.

The Aquatic Wildlife and Terrestrial Wildlife programs implement strategies and management actions to meet species population, reproduction, distribution, demographic, propagation, control, and health objectives set for populations that are consistent with and support all wildlife as well as conservation and recovery goals. An essential mechanism of wildlife enhancement is the regulated use of wildlife through issuance of tags or permits. The ability to make sound management and permitting decisions internally as well as provide expert recommendations to external customers whose activities may affect wildlife, is dependent on the quality and accessibility of our data.

Wildlife Enhancement manages for sustainable populations and maximizes wildlife-related recreational opportunity.

- Vision: Conservation and wise use of Arizona's diverse, sustainable wildlife resources.
- Desired outcome: Healthy, sustainable wildlife resources and their habitats that are accessible to all Arizonans.

- II. **Wildlife Planning** ensures delivery of expert guidance and leadership in the conservation of wildlife by planning and developing approaches for managing wildlife. The Department's two-pronged approach to wildlife planning defines conservation actions to address stressors at a landscape-level scale, identifying and implementing actions to address stressors at the habitat level, while simultaneously implementing species-specific actions to address the needs of species of greatest conservation need. The outcome of this bilateral approach manages habitats for all wildlife while proactively addresses needs of the most vulnerable species.

Conservation agreements, management plans, and participation on recovery teams are examples of tools the Department employs to plan for the future of wildlife in Arizona. These plans generally identify the needs of wildlife and provide management actions to meet the goals for long-term conservation and/or recovery.

Wildlife Planning ensures the Department develops effective strategies to inform conservation and/or mitigation needs associated with activities that could impact wildlife and their habitats.

- Vision: Strategies for all state trust species to inform conservation and/or mitigation needs associated with any activity that could affect wildlife and wildlife habitat.
- Desired outcome: A suite of realistic, implementable, cost-effective, and adaptive conservation strategies that conserve and protect state trust species.

- III. **Wildlife Data and Technology** recognizes the Department possesses the most comprehensive wildlife-related data in Arizona. The Department continuously collects and supplements its data to increase the quality and quantity of information. Much of the data collected includes spatial attributes, providing increased applicability and value to both customers and partners. To inform conservation and decision making, data often require processing and analysis to fully inform an issue. Data analysis is commonly conducted on a case-by-case basis; however, automated data analysis through the development of tools that allows the information to be used widely to more easily query data and receive information in a consistent manner is becoming increasingly important and relevant to managing complex and challenging wildlife issues. Data collection can be further enhanced by the development of applications that facilitate collection and warehousing of data that allows for enhanced data collection.

Wildlife Data and Technology enables the Department to continuously collect, manage, and share the most comprehensive, current, and accessible scientific data.

- Vision: The Department is continuously collecting and supplementing the most comprehensive, current and accessible wildlife-related data to inform wildlife planning and management decisions for Arizona, developing cutting edge, value-added technological tools to access and analyze datasets.
- Desired outcome: Collection, compilation, and access to data and tools to display and use scientific wildlife-centric data for wildlife planning and management.

- IV. **Habitat Protection** protects habitats of greatest conservation need, including natural landscapes, open spaces, and native fish and wildlife habitats on public and private lands by employing the use of conservation easements, water rights and claims, and other tools. In addition to supporting ecosystem management on lands owned and managed by the Arizona Game and Fish Commission, *Habitat Protection* provides a service to private landowners that aims to conserve, protect, and monitor lands and their associated wildlife values.

Habitat Protection creates an extensive network of interconnected, functional wildlife habitats and ecosystems necessary to conserve and protect wildlife on public, state and private lands.

- Vision: An extensive network of interconnected wildlife habitats (intact natural areas with functional ecosystems necessary for supporting wildlife) across public, state and private lands, to prevent genetic isolation and mitigate for habitat shifts/impacts to support sustainable populations and recreational opportunities.
- Desired outcome: Conservation and protection of wildlife corridors across the Arizona landscape that support and enhance wildlife genetic diversity and resilience.

- V. **Habitat Restoration** maintains and enhances relationships with partners and land managers to improve wildlife habitat at a variety of scales throughout Arizona. *Habitat Restoration* returns ecological function to areas that have been degraded as a result of development or other uses that have altered the natural structure and function of these habitats. Installation and maintenance of wildlife water developments, control and eradication of invasive and undesirable species, and cultivation of native plants are a few of the many tools used by *Habitat Restoration* to achieve ecological outcomes.

Habitat Restoration implements landscape-scale habitat restoration by leveraging partnerships and volunteers.

- Vision: No net loss of wildlife habitat and maximum functional lift for wildlife by proactively implementing landscape-scale habitat restoration by leveraging partner and volunteer resources.
- Desired outcome: No net loss of wildlife and their habitats through create collaboration among partners and volunteers that leverages mutual interests and resources.

VI. ***Access*** maintains existing and develops new opportunities for the public to view wildlife, or participate in wildlife-related recreation, such as wildlife viewing, hunting, trapping, fishing, and where compatible, off-highway vehicle recreation. In some instances, securing access includes purchasing properties and/or easements whereby the public can visit and observe wildlife in their natural habitats. Securing access may also include developing term agreements with private landowners or other land managers that allow public access for wildlife-related recreation.

Partnerships with private landowners have led to improved habitat for wildlife and secured access to areas for wildlife recreation. In return, landowners often make habitat improvements to their property through funding provided by Department programs. Collaborating with other government organizations allows the Department to leverage resources to achieve shared conservation goals.

Access to public lands safeguards a diversity of recreational access for all Arizonans.

- Vision: Securing recreational access on public and private lands through creative partnerships for public benefit.
- Desired outcome: The Department is recognized as a national leader in securing recreational access through creative and sustaining partnerships for the benefit of the public, wildlife populations, and private landowners.

VII. ***Technical Expertise*** is a cornerstone of the Wildlife LOB, ensuring a strong customer service approach to meeting the wildlife-related information needs for all Arizonans. Department staff provide emergency response, environmental review, planning, technical, analysis, assessment, research, survey, management, and other expertise to numerous entities statewide to ensure the latest scientific information on wildlife and their life history needs are available to all Arizonans.

Technical Expertise enables skilled and knowledgeable Department staff to inform and guide conservation and protection of Arizona's wildlife resources.

- Vision: Provide wildlife management expertise to partners and customers to proactively pursue conservation protections and ensure no net loss for state trust species and the habitats on which they depend.
- Desired outcome: Department staff are recognized for their scientific expertise, professional knowledge, and experience to influence and guide conservation and protection of Arizona's wildlife.



WILDLIFE ENHANCEMENT

Sustainable wildlife populations
Licenses, permits and tags
Management of Commission-owned properties
Enforcement of wildlife laws and regulations
Augmentation of wildlife populations
Establishment of new wildlife populations
Conserve and restore T&E species
Control/minimize impacts of invasive species



WILDLIFE PLANNING

Develop and administer conservation agreements
Wildlife planning
Recovery planning
Management plans
Management Focal Area Plans
Watershed Management Plans



WILDLIFE DATA & TECHNOLOGY

Wildlife occurrence and distribution data
Wildlife demographic data
Wildlife health and disease data
Wildlife habitat data
Wildlife handling data
Wildlife harvest data
Wildlife access data
Water quality data
Citizen science data
Invasive species distribution and abundance data
Customer data
Smartphone App development/use
Information management tools
Online evaluation tools



ACCESS

Access to wildlife and recreation via property acquisition, easements, or access easements
Land Access Program - resources to private landowners
Coordination with land management agencies to support wildlife recreational access



HABITAT RESTORATION

Habitat restoration and development
Wildlife water developments
Piscicide application
Control or removal of undesirable species
Cultivation of wildlife plants/habitat



HABITAT PROTECTION

Conservation easements
Commission-owned wildlife areas and property
Secure water for wildlife and habitat by holding water rights and claims



TECHNICAL ASSISTANCE

Contract services (lake management, cultural resource)

Provide expertise/support to others in response/management of incidents that impact wildlife
Contract wildlife services and fish production
Environmental review/comment
Data generation, analysis and interpretation
Expertise re: T&E species issues
Technical reports, peer-reviewed literature, wildlife-friendly planning guidelines
Planning expertise and services
Interagency coordination
Mitigation expertise/guidance for municipalities and companies

Field personnel/staff local wildlife expertise
Certified WQ laboratory services - water quality evaluation/analysis
Fish culture
Aquatic invasive species assessments and decontamination stations
Fish and wildlife research
Wildlife mortality investigation/response
Wildlife health assessments and certification
Wildlife damage assessment
Use of drone technology
Genetic services

IV. Implementing the Seven Sublines of Business Through Terrestrial and Aquatic Programs and Administrative Branches

I. Terrestrial Wildlife Program

The Terrestrial Wildlife Program is charged with conserving and enhancing Arizona's diverse wildlife resources by actively managing wildlife populations and their habitats. This active management is enabled with the best available science fostered through close collaboration and partnerships with private landowners, federal land management agencies and a variety of political jurisdictions. These partnerships allow the Department to manage and implement habitat improvements, species translocations, and invasive species control, providing reasonable access and wildlife recreation on behalf of and for all Arizonans.

Terrestrial Wildlife Goals:

- Use the most comprehensive and current wildlife data and science to inform wildlife planning and management decisions for Arizona.
- Manage all wildlife species to maintain biological diversity and reduce unnecessary regulatory burden.
- Expand voluntary partnerships with private entities, businesses and industry to support conservation and recreation.

Terrestrial Wildlife Objectives:

- Enhance wildlife habitat, including securing habitat connectivity.
- Integrate Comprehensive Game Management Planning and Statewide Wildlife Action Planning efforts.
- Manage game populations to meet the objectives established within hunt guidelines.
- Conserve species of greatest conservation need and mitigate the level of federal regulatory impacts to Arizona.
- Promote and improve habitat and wildlife conservation on private lands.
- Improve access opportunities.
- Promote responsible recreational use of lands.

Terrestrial Wildlife Strategies:

- Implement comprehensive game management through landscape level planning.
- Translocate, transplant or stock wildlife.
- Incorporate spatial analysis into traditional survey methods.
- Implement population and habitat enhancements to benefit wildlife.
- Implement actions to maintain or improve populations for Species of Greatest Conservation Need (SCGN) to avert federal protections.
- Monitor and investigate wildlife health issues in identified populations or priority areas.
- Implement priority actions in species recovery plans, conservation agreements, management plans, and statewide wildlife action plan strategies.
- Deploy voluntary, innovative and incentive-based tools to engage partners, businesses and industry in conservation of species.
- Coordinate with Department programs and essential functions to implement recreational access partnerships with private and governmental landowners.

- Identify critical areas of access; use diverse techniques to maintain or enhance access to these areas.
- Enhance relationships and partnerships with landowners to maintain and improve access.
- Enhance relationships and partnerships with landowners to improve and enhance wildlife habitat on private land.

II. Aquatic Wildlife Program

The Aquatic Wildlife program protects and manages Arizona's aquatic wildlife populations and their habitats, while also working to provide sport fish opportunities for present and future generations. Aquatic wildlife resources are managed through sound science and data driven decisions and are fostered through collaboration and partnerships with private landowners, federal land management agencies and a variety of political jurisdictions. These partnerships allow the Department to manage and implement habitat improvements, species translocations, invasive species controls and sport fish recreation on behalf of and for all Arizonans.

Aquatic Wildlife Goals:

- Use the most comprehensive and current wildlife data and science to inform wildlife planning and management decisions for Arizona.
- Balance sport fish recreation with native aquatic resource conservation.
- Implement watershed scale planning and management.
- Enhance aquatic wildlife ecosystems.
- Expand voluntary partnerships with business and industry to support conservation and recreation.

Aquatic Wildlife Objectives:

- Optimize angling opportunity through diversity of sport fish species and stocking locations.
- Meet fish population survey and creel survey needs on the priority waters per management plan guidance.
- Increase public recognition and support of the Department's role as the leader in aquatic wildlife management.
- Monitor and investigate limnologic, productivity and environmental conditions on the priority waters per management plan guidance.
- Improve population status of Endangered Species Act listed, Candidate or priority SGCN.

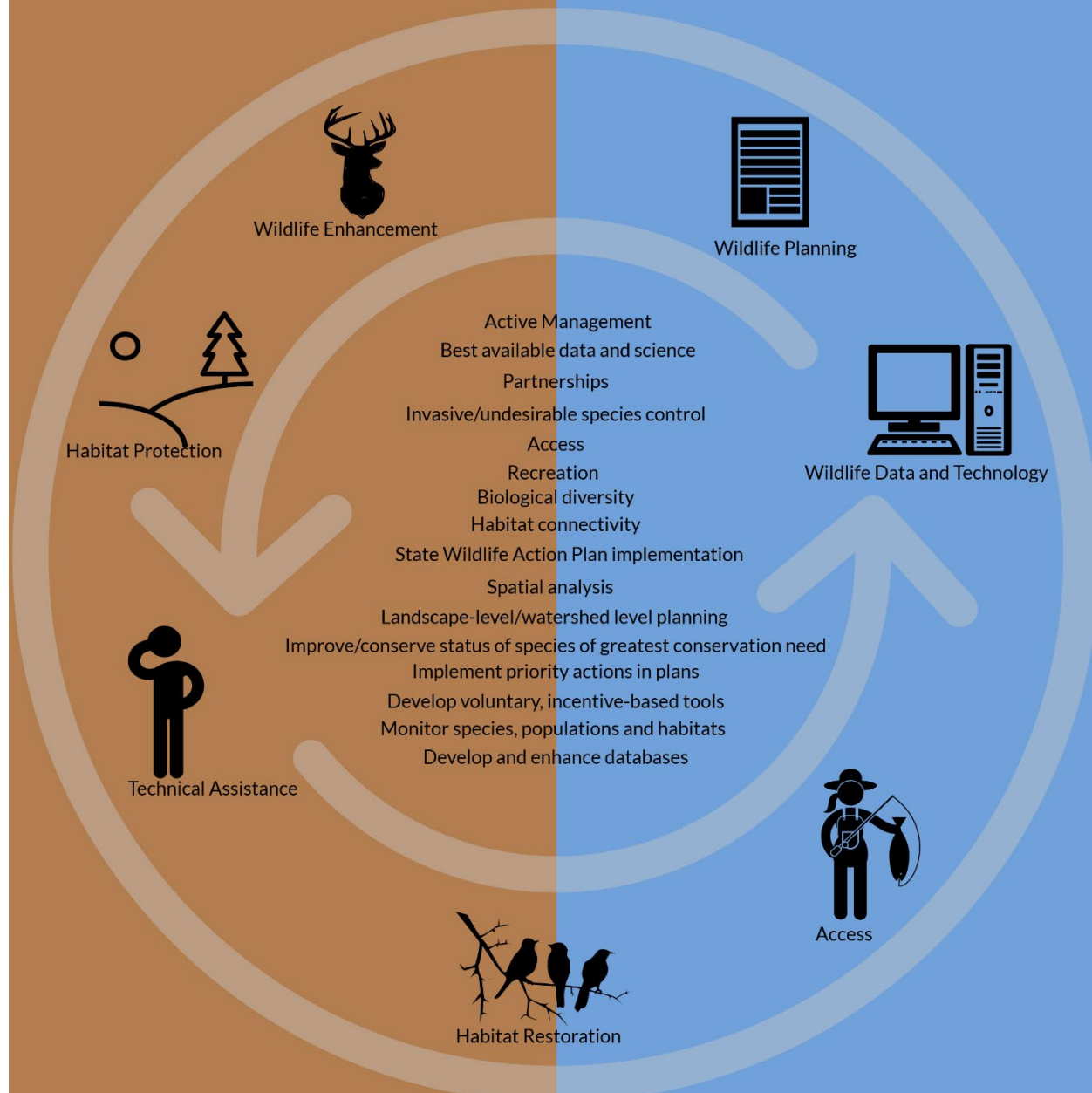
Aquatic Wildlife Strategies:

- Continue development and implementation of multi-species, watershed-based aquatic wildlife management plans.
- Implement aquatic habitat improvement projects.
- Implement new eradication, containment and prevention projects for undesirable and/or invasive species.
- Implement priority actions in species recovery plans, conservation agreements, management plans and statewide wildlife action plan strategies.
- Continue development and enhancement of comprehensive aquatic wildlife databases.

AGFD Wildlife Lines of Business Programmatic Crosswalk

Terrestrial Wildlife

Aquatic Wildlife

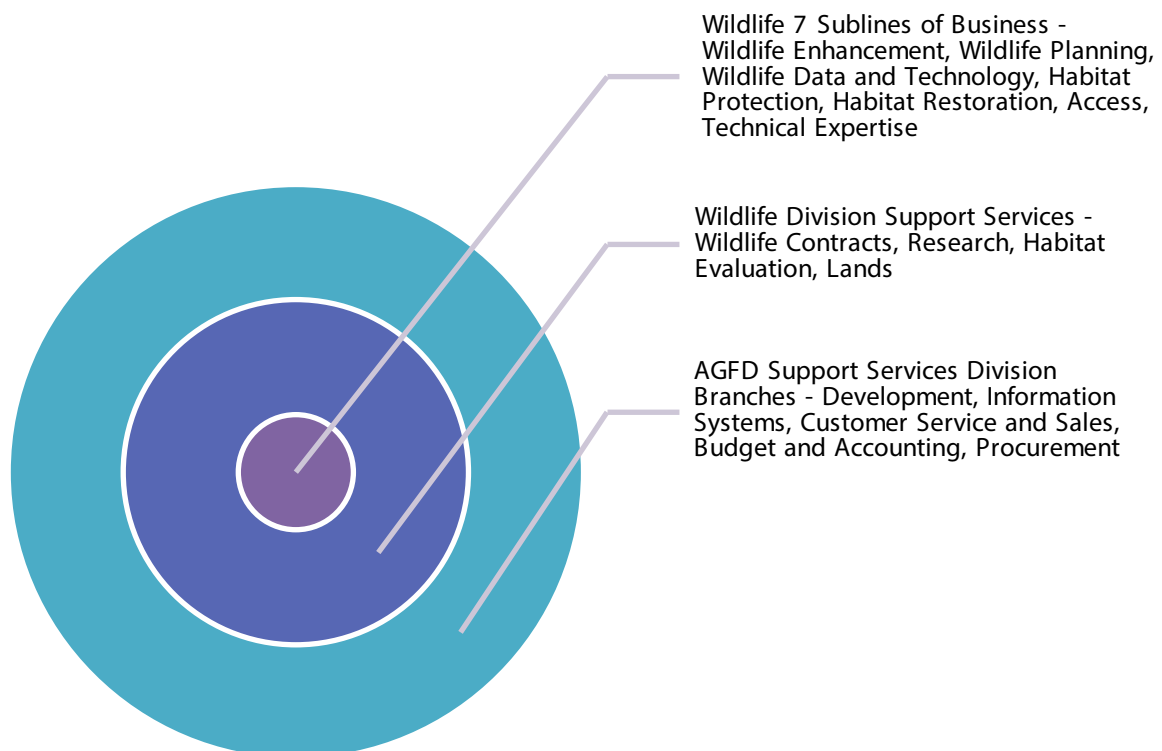


III. Support Services

Within Wildlife Division, there are four supporting business service areas—Wildlife Contracts, Research, Habitat Evaluation and Lands. These branches inform and facilitate the conservation of wildlife and their habitats through the collection and development of the best available biological and social data and research for the current and future management of wildlife and habitat in Arizona.

The agency has a Support Services Division, which includes five branches that provide administrative support to all wildlife-related activities.

- *Development Branch*—Responsible for water development, engineering, construction, boating access and facilities maintenance
- *Information Systems Branch*—Responsible for computer and network support, telephone systems, management of customer database, draw processing and new software development
- *Procurement Branch*—Procures contracts for and procures goods and services, provides fleet vehicle maintenance operations and Department mail services
- *Budget and Accounting Branch*—Manages the Department's budget, including contractual activities
- *Customer Service and Sales Branch*—Responsible for policies and procedures that set the Department standard for customer services, sales of licenses, watercraft registration, and draw processing.



V. Trends, Strengths, Opportunities, Challenges, and Threats

Arizona is experiencing a variety of trends affecting the ability of the state to manage wildlife and their habitats. These include:

- Demographic changes, leading to a more urbanized and culturally diverse public;
- Loss, degradation, and fragmentation of habitat;
- Land and water rights and use conflicts;
- Introduction, establishment, and spread of invasive species;
- Increased frequency and intensity of wildland fires;
- Increased demands for diverse recreational opportunities;
- The effects of climate change, including warmer air and water temperatures as well as long-term drought.

Each of the seven lines of business have an articulated set of strengths, opportunities, challenges, and threats in the areas of core mission, agency workforce, program administration, funding, customers and partners, information and data, communication, and other external factors. The following is a compilation of these attributes by category and line of business.

STRENGTHS	Wildlife Enhancement	Wildlife Planning	Wildlife Data & Technology	Habitat Protection	Habitat Restoration	Access	Technical Assistance
Core to mission and relevance	X	X	X	X	X		
Agency Workforce							
Expert, knowledgeable, committed, competent, passionate, customer service oriented, skilled staff—recognized as experts	X	X	X	X	X	X	X
Experienced at developing agreements		X					
Capacity to provide technical expertise							X
Program Administration							
Effective internal protocols and processes in place		X	X				X
Existing rules that provide authorities to manage wildlife, administer permits, and enter into agreements	X						
Existing agreement with FWS that provides authority to manage threatened species and endangered species	X						
Internal framework/expertise to administer T&E species	X						
Capacity to support and maintain expertise							
Authority to acquire water rights to support wildlife				X			
ARS 33-1551 was improved to protect landowners (access)						X	
Funding							
Dedicated funding sources (e.g., federal – PR and DJ)	X						X
Commission authority to change fee structure	X						
Approved In Lieu Fee compensatory mitigation program exists					X		
Financial flexibility with several eligible funding sources					X	X	
Ability to negotiate to maximize funding resources into large landscape-scale initiatives					X	X	
Customers and Partners							
Base constituency and volunteers—shared goals and interests	X				X	X	
Diverse public interest in wildlife and wildlife management	X						
Customers value and use our data and information			X				
Ability to develop and maintain relationships (e.g., landowners, management agencies) and enter into agreements				X	X	X	
Landowner Compact law enforcement incentive popular with landowners						X	
Information and Data							
Large quantity of data is collected and available	X		X				
Long-term datasets on many species and customers			X				
Expertise and capacity to analyze, interpret, and deliver data			X				
Technology and processes in place for data collection and sharing			X				
Innovative approaches to collecting and sharing data			X				
Communication							
Different channels used to reach and inform public.	X						
Communication between LRP and staff is effective						X	
CHALLENGES	Wildlife Enhancement	Wildlife Planning	Wildlife Data & Technology	Habitat Protection	Habitat Restoration	Access	Technical Assistance
Agency Workforce							

CHALLENGES	Wildlife Enhancement	Wildlife Planning	Wildlife Data & Technology	Habitat Protection	Habitat Restoration	Access	Technical Assistance
"This is how we've always done it" mentality	X						
Lack of dedicated, technical IT/GIS resources to meet needs			X				
More workload than staff can handle; more demand for programs				X	X	X	X
Agency risk tolerance low; creative solutions difficult to implement				X	X	X	
Ensure every employee is a good ambassador; speaks with one voice							X
Often reactive instead of proactive							X
Program Administration							
Conflicting objectives (species recovery vs. harvest goals)	X						
Some permits are not renewed annually	X						
Lack of standardization across permits and within issuance	X						
Planning primarily addresses T&E species; reactive		X					
Bureaucratic process is cumbersome, slow, expensive		X					
Lack of ability to define where priority conservation should occur		X					
Scattered, disjoint projects not coordinated across LOB			X	X	X		
Length of acquisition process hinders ability to purchase lands				X			
Funding							
Active management is expensive	X						
Most permits/technical expertise are not operating at cost recovery	X						X
No mechanism for generating revenue beyond licenses/permits	X						
Insufficient funding/lack of dedicated long-term funding to conserve species in need, operate and maintain properties	X	X		X			
ILF long-term endowment fund needs legislative approval; restoration depends on sales of mitigation credits		X			X		
Customers and Partners							
Recovery plan leads are process owners – AZGFD participates with these entities to develop and finalize plans		X					
Federal and state land management policies					X	X	
Need willing landowners to participate in program						X	
Information and Data							
No centralized data management system			X				
No inventory, quality control, data sharing protocol; no ability to easily access data; no process to monetize data			X	X	X	X	
Use of data may be restricted due to funding source			X				
Lack understanding of how to use data to talk to non-traditional audiences; use data to the fullest extent possible			X				X
Inability to scale data to use it for a variety of purposes			X				
Communication							
Lack of centralized information on permitting	X						
Need refined communication channels to reach broader public	X						
Awareness of habitat activities low with license buyers; department efforts not recognized by customers					X	X	
Need to distribute information in a timely manner							X
External Factors							
Weather and other factors/variables affect success	X						

CHALLENGES	Wildlife Enhancement	Wildlife Plannin g	Wildlife Data & Technology	Habitat Protection	Habitat Restoratio n	Access	Technical Assistanc e
Inability to influence decisions on federal/private lands	X						

OPPORTUNITIES	Wildlife Enhancement	Wildlife Planning	Wildlife Data & Technology	Habitat Protection	Habitat Restoration	Access	Technical Assistance
Agency Workforce							
New ideas/new ways to approach conservation/enhancements	X						
Uniquely positioned to change the paradigm for data collection in Dept.			X				
Continue cost share positions with other agencies					X		
Monetize training							X
Program Administration							
Large amount of public land in AZ increases conservation opportunities	X						
Implement annual renewal cost for each license	X						
Add new permitting mechanism for golden/bald eagles	X						
Further develop iSupport Wildlife							
Development of proactive planning processes – value-added to industry		X					
Develop/prioritize AZ conservation goals/identify opportunities to implement		X					X
Develop ability to quantify conservation impacts/proposed mitigation		X					
Better define guidelines and policies that manage Dept. data holdings			X				
Promote property management that supports ecosystem management				X			
Work among all Department programs to promote core line of business values across all programs – be the “eyes and ears” for all programs	X	X	X	X	X	X	X
Develop a prioritization system for research, data collection, use of expertise, and project evaluation							X
Funding							
Ability to expand program capacity beyond existing funding streams	X				X		
Ability of Commission to increase license fees to a cost recovery level	X						
Seek funding to support line of business goals				X	X	X	
Pay for conservation through mitigation							X
Customers and Partners							
Partner with numerous agencies, private and NGOs	X						
High demand for permits	X						
Diverse interest from public in wildlife/wildlife management	X						
Potential benefits to industry by preventing regulatory restrictions resulting from listing		X					
Develop state tourism/recreation - promote on Commission lands				X	X	X	
Foster increased grassroots approach to habitat restoration/protection					X		
Work with other government entities to promote wildlife issues					X		
Engage in state/national initiatives to change policies/laws/practices of state and federal land and water management agencies					X	X	
Form relationships with local planning and zoning boards					X	X	
Information and Data							
Data-rich business and technology increases ability to capture data; develop data at multiple scales	X		X				
Use existing portal to offer information/provide licensing framework	X						
Paperless licensing option increases efficiencies/reduces costs	X						
Incorporate more citizen science data collection	X		X				
Use data to guide priorities and proactively manage species			X				

OPPORTUNITIES	Wildlife Enhancement	Wildlife Planning	Wildlife Data & Technology	Habitat Protection	Habitat Restoration	Access	Technical Assistance
Increased need for data as habitats/landscapes experience stressors; inform all levels of planning; inform mitigation; multiple scales; maintain Department relevancy; influence political landscape			X				X
Develop processes to package and deliver our data			X				
Communication							
Increase outreach to the public, new partners and traditional NGOs	X			X	X	X	
Increase communication among all Department programs					X		
Develop outreach that builds public trust in what Department does; enhances appreciation, understanding and awareness of core Department values/mission	X						X
Develop creative ways to monetize, streamline, package and deliver our data and expertise							X

THREATS	Wildlife Enhancement	Wildlife Planning	Wildlife Data & Technology	Habitat Protection	Habitat Restoration	Access	Technical Assistance
Agency Workforce							
Regional staff are grant funded and at risk to budget cuts; impedes Dept ability to foster relationships with landowners						X	
Program Administration							
Unknown effects of cumulative impact of take through permits	X						
No mechanism for take of golden and bald eagles	X						
Acquiescence to federal agencies for enforcement of migratory birds	X						
Drought, climate change, and invasive species management				X	X		
Lack of statutory relationship between H2O management and impacts to wildlife resources					X		
Funding							
Inability to recognize sufficient ROI for some activities	X						
Insufficient funding	X						
Lack of compensation for Department data			X				
Loss of accrued heritage funds to legislature before they can be used				X			
Customers and Partners							
Risk of losing support from citizen science if adding a fee	X						
Public perception associated with fee increases	X						
Changing values and perceptions of the public	X						
Perception AZGFS is selling out to industry		X					
Competition for our shrinking customer base			X				
Perception that use of land is more valuable than ecological value				X	X		
Changes in federal land management/state land department policies					X		X
Giving SHPO and other entities more authority than actually exists					X		
Information and Data							
No Department-wide process for sharing data; no centralized data management system			X				
Use/misuse of Department data by others			X				
Citizen science data QA/QC; difficult and time consuming to verify			X				
Outdated Game Data system			X				
Inability to develop and implement data sharing guidelines			X				
Communication							
Public perception	X						
Increased access to communication avenues by the public; can lead to misinformation	X						
External Factors							
Federal regulations, lawsuits by NGOs	X						
Unstable/stochastic nature of environments	X						
Changing political climate; exposure to political opposition	X	X					
Changing AZ demographics			X				
Loss of critical habitat to development; loss of access to development				X	X	X	
Changing societal trends							X

VI. Gap Analysis—Opportunities to Maintain and Build on Strengths and Address Challenges, Stressors, and Trends

Wildlife Enhancement

The core product of the Wildlife Enhancement subline of business is sustainable populations of wildlife; all of the other products and services support the core or exist because of the core. The Department provides a multitude of wildlife-related products and services to the public, other agencies, and private and nongovernmental organizations. Some of the products, such as hunting and fishing licenses generate revenue, whereas other permits do not. There is opportunity to generate funds by charging fees for permits that are currently free. However, some products and services need to remain free to maintain credibility and influence with the public.

The Department's Level of influence related to wildlife enhancement is on par with federal agencies and other state/federal government entities, universities, and consultants. The Department has the highest quality, quantity, diversity and availability of data. Opportunity exists to more effectively leverage our data and expertise.

We have an opportunity to improve how we make use of our data to better inform and guide conservation strategies and management activities. Automated, continuous collection of data that is easily accessed would result in large quantities of up-to-date information ensure that the best scientific data and information is used to guide management and policy decisions. Reliance on scientific methods of data collection will enable large amounts of information to be used to make transparent and defensible decisions that build credibility and influence.

The Department has a strong history of effectively engaging customers that participate in hunting and fishing, but has not been as effective in engaging people that participate in other wildlife-related activities that do not make as direct a contribution to those activities through purchase of permits or licenses. Our strategic intent is to build awareness and credibility in this segment of customers so that they understand the benefits they realize from the Department's stewardship and management of all wildlife.

Vision

Arizona's diverse wildlife resources are conserved by managing for sustainable wildlife populations and their habitats while supporting and promoting a diversity of responsible wildlife-related recreational opportunities.

5-year Goals

- Greatest threats to individual species are identified; species distributions are more accurately known; information needs are known/defined.
- Mechanisms and technology exist to automatically capture data and Department culture incorporate automatic/ingrained data collection and use.
- Ensure complete cost recovery¹ for all current permits.
- Centralized, streamlined permitting process that is user friendly that collects comprehensive take data.

¹ Include administration and inflation costs.

10-year Goals

- ACS is defining adaptive management in which the most current and best data informs decisions, and outcomes from management actions continually feedback to enhance the data.
- Generate sufficient revenue to support wildlife enhancement needs.
- Permitting system that supports management of sustainable populations (cost to monitor, habitat restoration, continued take of animals over time)
- Expand Endangered Species Act 10a1a permit to include long-term, perpetual, or purposeful take.
- Support continuing management and conservation for future generations by creating an endowment into which mitigation for activities that result in long term perpetual take of state trust species would be paid.

Recommendations (5-year):

- Develop data collection and management needs necessary to support ACS.
- Evaluate and implement new fee structures for all permitted and non-permitted take.
- Explore new structures to allow for permitting of take of all wildlife.
- Consider legislative, rule, or statutory authority changes to support voluntary participation.

Recommendations (10-year):

- Continue to develop data collection and management needs necessary to support ACS.
- Develop a public strategy and political will to support needed legislation.

Wildlife Planning

Wildlife Planning is a core mission for AGFD. Agreements and plans are a very important tool for setting goals and priorities, tracking progress and demonstrating successes as well as communicating with partners and stakeholders. Opportunities exist to better identify conservation priorities and use available tools available to maximize conservation for those priorities. Marketing AGFD products would serve to increase AGFD relevance, credibility, and influence.

Vision

The Department has conservation strategies in place for all state trust species to inform conservation and/or mitigation needs associated with any activity that could impact wildlife and wildlife habitat.

5-year Goals

- Identify Conservation management/priority areas for 50% of species of greatest conservation need (SGCN) using state-of-the-art data collection and management tools identified in the Data and WL Technology sub-lines of business.
- Identify management priority areas for species of economic and recreational importance, using state-of-the-art data collection and management tools identified in the Data and WL Technology sub-lines of business.
- Use mitigation information tools (e.g. HabiMap 2.0 and Hexagon analysis) to inform industry, urban planning, and conservation activities.
- Develop industry and development partnerships that create mutual assurances for conservation and economic growth.

10-year Goals

- Identify Conservation management/priority areas for 100% of species of greatest conservation need (SGCN) using state-of-the-art data collection and management tools identified in the Data and WL Technology sub-lines of business.
- Develop conservation agreements for management priority areas for the species of economic and recreational importance.

- Develop insurance/banking mechanism that allows for industry and development to invest in proactive conservation measures that ensure sustainable wildlife resources into the future.
- Identify legislation opportunities to enable conservation insurance/banking.
- Use industry and development partnerships to create mutual assurances for conservation and economic growth.

Recommendations

- Establish conservation priorities and objectives for state trust species.²
- Intended to prevent future listings, address current ESA requirements, and create a mutual benefit for industry to invest in conservation.
- Develop a focus group to define industry needs and a framework for developing a synergistic relationship for conservation.

Wildlife Data and Technology

AGFD wildlife data is comprehensive, incorporating statewide coverage and longer-term data sets; can be made value-added with processing, interpretation, analysis, and/or packaging, and can be made readily available through various data sharing options or through existing web interfaces/applications/tools. Regionally, the department is a leader at influencing wildlife management decisions and strategy based on quality of our data and expertise in developing data products/tools.

The Department has opportunities to make its data more readily available in packaged, "value-added" formats (see recommendation 2d), develop data sharing relationships with universities and other agencies to maintain the Department's "One Stop Shop" reputation (see recommendation 2e), and aggressively market itself as a wildlife data steward with experts available to provide guidance on the appropriate use of the data (See recommendation 2f).

AGFD maintains a dedicated program that consistently responds to a significant number of data requests (HDMS).

The Department is obligated to provide data information by law, and in most cases, allows data to be shared at no cost.

Strategically, the department should consider an approach of selling services and products based on data, but provide/make available raw data. To do so, the department needs to identify what key data tools to develop and the market for those products (see Wildlife Technology sub-line of business vision, goals and recommendations).

Vision

The Department is continuously collecting and supplementing the most comprehensive, current, and accessible wildlife related data to inform wildlife planning and management decisions for Arizona, developing cutting edge technological tools necessary to provide value-added data products.

5-Year Goals

- Develop programmatic guidelines to standardize data collection within programs (e.g., elk surveys, creel surveys).

² Implementation of this recommendation depends on the ability to identify conservation/management priority areas for 50% of species of greatest conservation need.

- Develop necessary data collection and editing applications to ensure live data collection and analysis.
- Update species distributions in real time.
- Ensure all data is accessible through a centralized data repository.
- Use technology (HabiMap 2.0 and hexagon analysis) to inform planning for all species.
- Foster a Department-wide culture of continuous data collection using current technology that is both opportunistic and targeted as well as a culture of data-driven decision making using available tools.
- Use citizen science resources to augment and expand data collection, ensuring adequate QA/QC controls exist to maintain high quality data.

10-year Goals

- Update (automatically), analyze, and serve all data live and constantly.

Recommendations:

- Develop the framework for centralized data storage, management, and quality control. (i.e., Enterprise)
- Automate data collection (for use by internal or external data collectors).
- Continue to support the Development of FINS, GDMS, mitigation/project evaluation tools and other Online, data collection and data analyses tools.
- Allocate IT staff to focus on WMD new realigned structure with fair allocation of resources to each work unit.
- Identify collaborative needs and encourage collaborative workflows.
- Develop a comprehensive Department-wide data sharing process and policy.
- Develop legislative strategy that allows for cost recovery and monetizing data (e.g., see Nevada model).
- Determine which data should be publicly shared and how to control access to data.
- Determine which data can be monetized, or used, to drive other lines of business (e.g., value-added planning tools).
- Develop data sharing tools, easily accessible to variety of users (e.g., HabiMap).
- Develop data sharing agreements with partners to ensure all wildlife data collected in the state is warehoused by the Department.
- Develop a comprehensive “data” communication and marketing strategy.

Habitat Protection

The Department competes with development to protect existing open spaces. Challenges affecting our ability to protect parcels from development include the ability to both purchase parcels (e.g., the Department cannot purchase parcels owned by Arizona State Lands) and complete land exchanges (e.g., several attempts at land exchanges with the US Forest Service have not resulted in completion of the exchanges). Generally, the Department works in concert with partners to assure properties are protected.

The Department has an opportunity to enhance promoting Commission owned and managed properties to the public in support of recreation, hunting, fishing, wildlife viewing, and tourism. Lands that AGFD owns and holds title to cannot be permanently protected by a conservation easement or other legal protection mechanism if the land was acquired with WSFR or section 6 funds. The USFWS retains an interest in those lands, and prohibit an encumbrance of any type being placed on the property.

Vision

An extensive network of interconnected crucial wildlife habitats (intact natural areas with functional ecosystems necessary for supporting wildlife) across public, state and private lands to prevent genetic isolation and mitigate for habitat shifts/impacts to support sustainable populations and recreational opportunities.

5-year Goals

- Acquisitions for habitat protection will be primarily via conservation easements.
- Hold fee title lands that can support priority management actions.
- Maximize benefit to crucial wildlife habitat by acquiring properties in proximity to one another.
- Fully develop and manage, at a minimum, one fee title property to maximize habitat protection and recreational opportunities.

10-year Goals

- Three fee title properties will be fully developed and managed to maximize habitat protection and recreational opportunities.
- Influence legislation that protects surface flow water rights in Arizona for the benefit of wildlife resources.

Recommendations:

- Assess and prioritize the value of fee title properties to align with the Habitat Protection vision.
- Develop/revise management plans for properties identified in #1 with focus on active management activities that support the vision.

Habitat Restoration

Locally, the department is a dominant leader in proactive habitat restoration, often working with partners on projects that achieve mutual goals. We have been able to demonstrate our ability to complete habitat development and restoration projects by working with partners/ competitors to create a common vision, working through compliance and other administrative issues, providing credible staff that are viewed as experts in habitat restoration, demonstrating specific expertise in most habitat restoration techniques (e.g., grassland restorations, forest thinning, water developments). However, the department had direct control over less than 1% of the state and less than .001% of the available water. Consequently, almost all of the department's habitat restoration activities must occur on property under the management authority of outside entities (e.g., private, State Trust lands, USFS, BLM, National Parks, etc.). For some localized/specific areas of habitat restoration, such as stream morphology and associated habitat enhancement, outside consultants have more experience/expertise, thus the department will generally contract professional services to plan and assist in the assessment, design, and implementation of stream restoration projects.

Regionally, the department is expanding its habitat initiatives role via the In Lieu Fee Compensatory Mitigation program, Natural Resource Damage Assessment program, Wildlife Contracts and Wildlife Habitat Programs, and through three successful Regional Conservation Partnership Program initiatives that have convened multiple partners to focus on common goals related to landscape level ecosystem restoration. Recognition is slowly improving due to successes in competitive grant programs and fostering partnerships at a regional level.

Nationally, we share information and seek to form relationships to enhance our ability to increase staff capacity, funding for on-the-ground projects, and our influence with other national entities.

Internationally, through the department's International and Borderlands program, we have established credibility with Mexico on a variety of wildlife management issues that may lead to habitat restoration opportunities in the future.

The department has consolidated its large habitat restoration programs into one program to increase efficiency and capacity, bolster credibility, and improve our ability to leverage opportunities to work with competitors/ partners, which is intended to lead to a higher level of recognition at the local, regional, and national level. We don't have an established, recognized, or similarly staffed corollary directed at riparian and aquatic habitat restoration.

Vision

No net loss of and maximum functional lift for wildlife habitat by aggressively implementing landscape-scale habitat restoration to the maximum extent by leveraging partners and volunteers.

5-year Goals

- Develop a process for all restoration activities that:
 - Identifies and prioritizes priority landscapes and habitats for restoration potential.
 - Identifies and prioritizes the species of highest priority for active management.
- Use prioritization efforts, such as Management Focus Area Plans or HabiMap 2.0, to direct implementation of landscape-scale habitat restoration on 500,000 acres of habitat annually (2.5 million acres over 5 years). At a minimum this includes efforts from the Terrestrial Program, Habitat Program, Aquatic Program, and Development Branch water development program.
- Seek to increase Department funding directed towards implementation of landscape-scale habitat restoration by 20% in five years.
- Seek to secure \$X million in external funding annually that is used to implement the Department's priority habitat restoration initiatives.
- Secure funding for all current staff dedicated to habitat restoration efforts and add the following positions: WMA habitat coordinator, ASLD liaison.
- Pursue a consortium of conservation and restoration partners to address, through new legislation, the relationship between water use and water management actions/decisions on aquatic and riparian habitats and their associated wildlife species, including endangered species, those at risk of being listed as endangered, and those that provide angling opportunities.
- Develop, or assist in reviewing and/or developing, a functional assessment methodology that can be applied to ephemeral systems in the Southwest.
- Strategically expand the Department's In Lieu Fee Compensatory Mitigation Program that provides mitigation opportunities in key watersheds across the state.
- Develop watershed management plans and goals with stakeholders, aligning common goals and creating funding opportunities for focused habitat restoration.

10-year Goals

- Create and maintain a geospatial statewide ranking system for all habitats and associated wildlife species that reflects current status, future threats, restoration and/or maintenance needs, and associated costs.
- Foster an established and highly functioning restoration work unit with staff adept at habitat restoration.
- Seek to increase, by 20%, Department funding directed towards implementation of landscape-scale habitat restoration.
- Seek federal and state legislation that directs a minimum of \$10 million in funding to the Department to use on landscape-level habitat restoration priorities and initiatives.

Recommendations:

- Establish habitat restoration priorities for the department and communicate those priorities across all programs working on habitat restoration.
- Intended to focus efforts department wide, increase cross program communication, and develop a platform to help persuade legislators, local decision makers, partners and industry to support and invest in habitat restoration.
- Priority areas will be developed using best available science within the Department, planning documents like MFAs, SWAP, and others that provide prioritization that can be used to develop a spatial representation to guide restoration efforts.
- Increase efforts to raise awareness of Department efforts on habitat restoration to help influence legislation, influence administrative decisions made by land management agencies, and to promote the economic value of healthy landscapes to tourism in Arizona.

Access

Locally, we lead proactive efforts to secure recreational access, working with partners to achieve mutual goals. We seek to improve recognition at a local and regional scale for efforts related to public access. We have been able to demonstrate our ability to secure access through a broad variety of programs that have been accepted by private landowners. We work with partners/ competitors to create a common vision, working through compliance and other administrative issues, providing credible staff that are viewed as experts in relationship building, problem solving, and respect for landowners. However, the department had direct control over less than 1% of the state. Therefore, almost all of our customer recreation takes place on property we do not administer (private, State Trust lands, USFS, BLM, National Parks, etc.). State government hiring freezes limit our capacity to initiate, plan, implement, and complete access projects, making it important to engage with partners to expand our capacity to secure access.

Regionally, we play and emerging role through our participation in AFWA and WAFWA working groups designed to share experiences and techniques to secure recreational access. Recognition is improving due to successes in competitive grant programs, such as the NRCS Voluntary Public Access Program.

Nationally, we share information and seek to form relationships to enhance our ability to increase staff capacity, funding for on-the-ground access projects, and increase our influence with other national entities.

The Department has an opportunity to bridge efforts related to recreational access across Shooting Sports, Wildlife Recreation, Aquatic Wildlife, and Terrestrial Wildlife programs to develop one

comprehensive focus and direction related to recreational access. This would allow the department to expand business opportunities related to recreational access, improve relevance with the public, improve internal efficiencies, and improve our ability to leverage opportunities to work with partners, leading to enhanced success securing recreational access.

Vision

The Department is recognized as a national leader in securing recreational access through creative partnerships for the mutual benefit of the public, land management agencies, and private landowners.

5-year Goals

- Refine access model to better depict available access.
- Increase state access opportunity by 2% above the current 43% (according to current model; excludes tribal and park service land).
- Double current budget (\$2.5M annual FY17) using both Department and external funding resources.
- Improve/expand wildlife benefits through access programs.
- Increase constituent awareness of the Department's proactive protection of public access opportunities; currently 57% of hunters are aware of and in support of Department's access efforts.

10-year Goals

- Maintain and improve opportunity for wildlife recreation on private lands through continued development of an incentive-based program.
- Maintain the percentage of the Department's budget dedicated to landowner relations subsequent to the five-year budget goal.
- Increase state access opportunity by 4% above the current 43% (according to current model; excludes tribal and park service land).
- Improve/expand wildlife benefits through access programs.
- Achieve 60% awareness and support by wildlife recreation users of the Department's proactive protection of public access opportunities.
- Identify and seek legislative opportunities to increase public access.

Recommendations

- Initiate marketing activities to raise awareness of Department efforts related to securing access for the public to help influence legislation and administrative decisions made by land management agencies, and to promote the economic value of outdoor recreation to tourism in Arizona.
- Develop and implement an integrated survey instrument that gauges awareness and support of access efforts (existing measure currently targets hunters only).
- Establish access priorities for the Department and communicate those priorities across all programs working on securing access.
- Focus efforts department wide, increase cross-program communication, and develop a platform to help persuade legislators, local decision makers, partners and industry to support and invest in recreational access.

Technical Expertise

The Department has an opportunity to increase marketing and outreach and commit additional funding and resources to technical expertise. Additional staff and web-based tools will enhance the ability of the Department to achieve enhanced relevance.

Vision

Proactively pursue protections and no net loss for State Trust species and the habitats they depend on. Maintain Department resources into the future. We will be the experts on Wildlife Management in Arizona and provide expertise to partners and customers and influence conservation in the State of Arizona to ensure sustainable populations of wildlife for current and future generations.

5-year Goals

- Recognized as state wildlife experts.
- Ensure staff carry a unified message to the public and partners.
- Achieve full cost recovery for services and products.
- Establish baseline conditions for all state trust species and identify legislation to enable protection of no net loss.
- Develop a unified and consistent approach and process for developing contract proposals and implementing contracted services, including a full cost recovery pricing schedule for all department services.

10-year Goals

- Ensure mitigation is required for all state trust resources through enacted legislation.
- Ensure the workforce is trained and has the tools necessary to maintain, monitor, and monetize the value of state trust resources.

Recommendations:

- Develop a marketing plan for our expertise (e.g., project evaluation, training) incorporating changing demographics.
- Develop a communications strategy.
- Identify where we can achieve or should pursue cost recovery.
- Prioritize where to apply our expertise, incorporating a cost-benefit analysis and efficiency analysis, and including an evaluation of research, data collection, use of expertise, and project evaluation.
- Implement employee development to ensure a knowledgeable and effective workforce.

VII. Conservation Targets and Metrics that provide for achievement of desired outcomes per sublines of business

VIII. Crosswalk Sublines of Business with Terrestrial and Aquatic Program Goals, Objectives, and Strategies

IX. Funding Strategies and Approaches to Achieve Desired Outcomes for the Seven Sublines of Business

X. Organizational Effectiveness—Recommendations to Enhance the Ability of Terrestrial and Aquatic Wildlife Programs to Achieve the Wildlife Management LOB—Integrate with Operational Planning
