



CLIMATE ADAPTATION SCIENCE CENTERS

SCIENCE TO INFORM MANAGEMENT

Olivia LeDee
Acting Director, Northeast Climate Adaptation Science Center

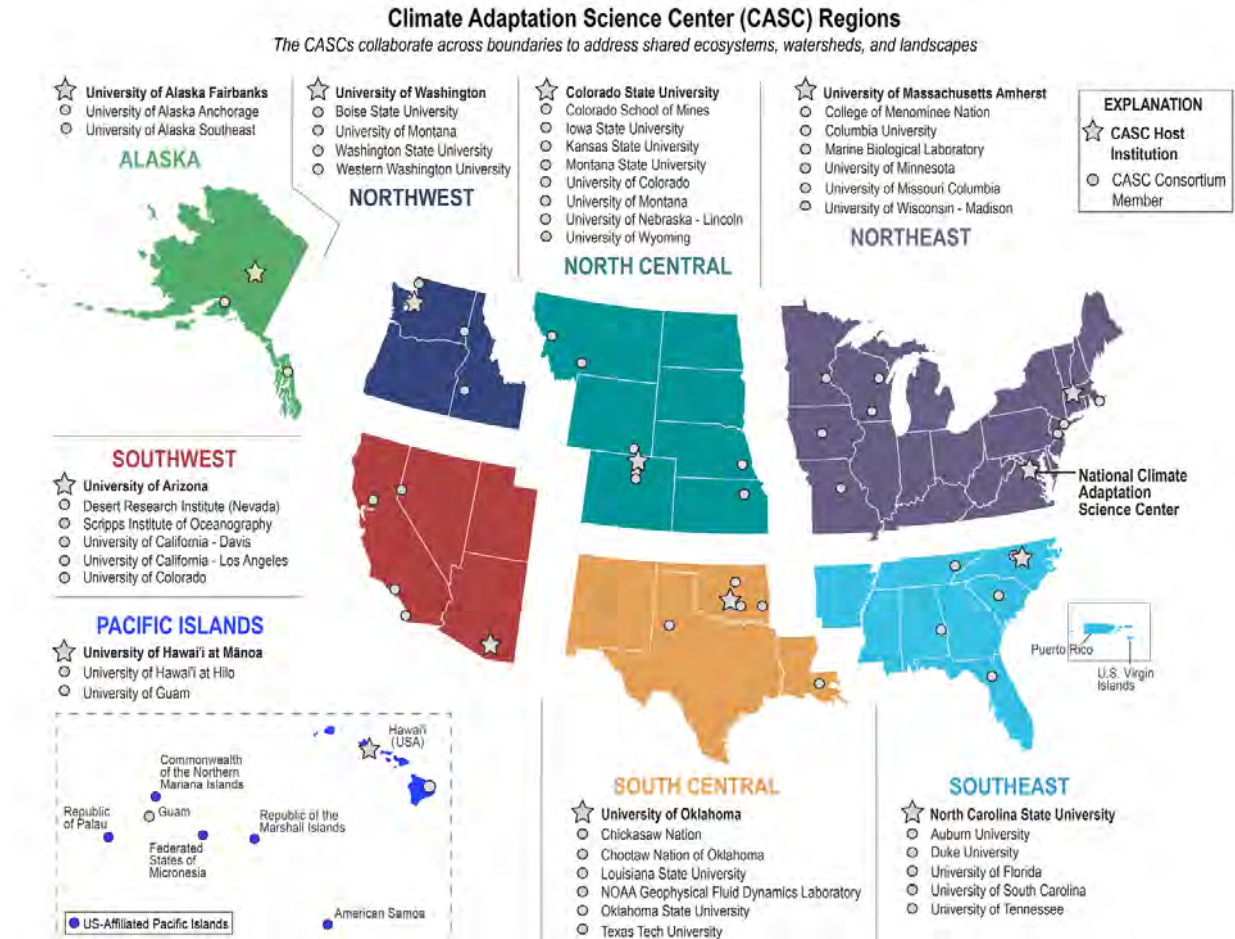
Robin O'Malley
Director, North Central Climate Adaptation Science Center

MAFWA Director's Meeting
6/26/18



MISSION

Work with natural and cultural resource managers to gather the scientific information and build the tools needed to help fish, wildlife and ecosystems adapt to the impacts of climate change.



SCIENCE FOCUS



Landscapes



Drought, Fire and Extreme Weather



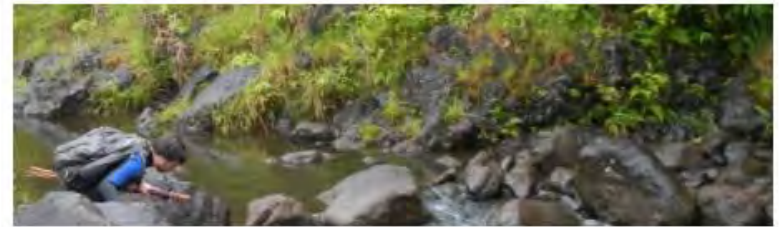
Wildlife and Plants



Water and Ice



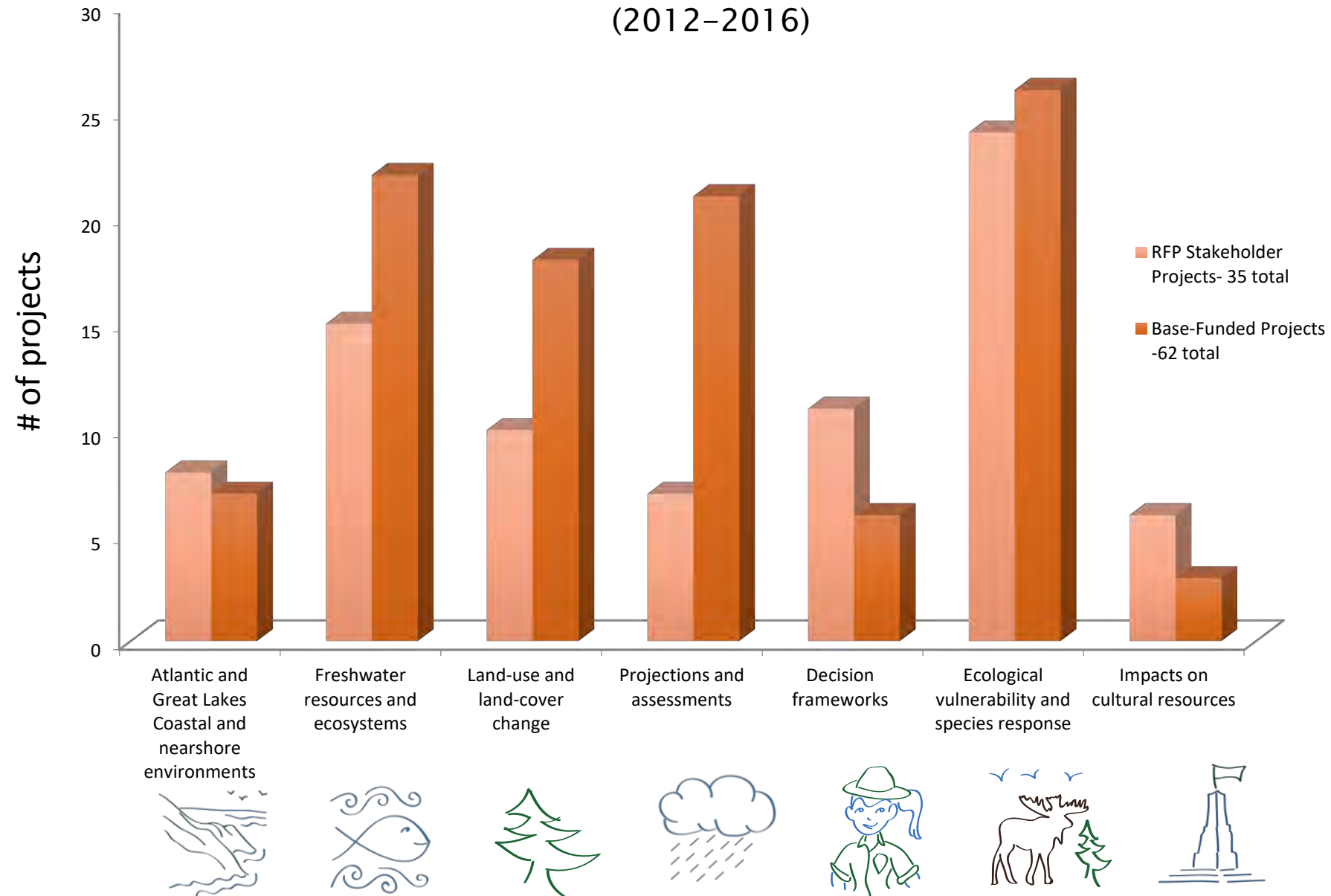
Native Communities



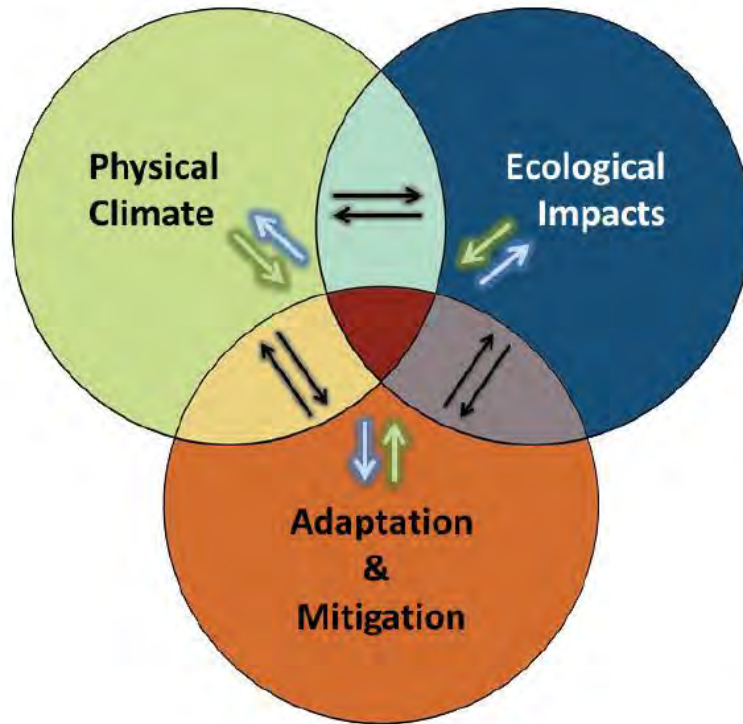
Education, Modeling and Tools

NORTHEAST CASC



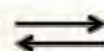
(2012-2016)



NORTH CENTRAL CASC



LEGEND

-  Management-driven science
-  Science-informed management
-  Synergies and leverage

- **State priorities for SGCN:** Identify state priorities for species with high potential for disruption (*2018 SGCN Science*)
- **Scenario Planning in the Dakotas:** Using scenario planning to plan for uncertainty (Wind Cave, Badlands Natural Resource Stewardship (*2018, Midwest Bison Plan*))
- **Grasslands, Crops and Field Switching in the Dakotas:** Understanding farmers choices
- **Wetlands and surrogate species – Prairie Potholes:** Informing conservation planning

Figure 1. The foundational science areas of the North Central Climate Science Center, with decision-focused, resource management projects meeting at the intersection of these areas.

MAFWA CLIMATE SCIENCE PRIORITIES

- Lake systems and fish habitat
- Stream systems
- Deer, moose, elk
- Habitat restoration

REGIONAL CLIMATE CHANGE RESEARCH PRIORITIES

Midwest Association of Fish and Wildlife Agencies

2015 – 2016

Impact of climate change on lake systems and fish habitat



Declining ice cover, warming waters, and proliferation of invasive species are rapidly changing aquatic habitat in the region. As a result, fish communities are changing. Cold water species, like cisco and lake trout, are in decline; warm water species, like smallmouth bass and largemouth bass, are now dominant species in many lake systems. What does this mean for the future of fishing in the Midwest?

Impact of rising stream temperature, altered flow, connectivity, and interspecific interactions on macro-invertebrates, including mussels



Stream temperatures are exceeding the physiological thresholds of some organisms. Changing flows, including extreme high and low flows, is reducing survival and reproduction in numerous species. Poor connectivity, due to dams, culverts and other human structures, reduce the resilience of threatened and endangered species to these changes. How can we best manage sensitive invertebrate populations in these systems?

Response of deer, moose, and elk to the direct/indirect impacts of climate change



Winters in the Midwest are milder. Some species, like white-tailed deer, will be favored by warmer nights and decreased snow cover. For other species, like moose, warmer conditions will challenge survival and persistence in the Midwest. How do we adjust management to address changing big game populations and harvest dynamics?

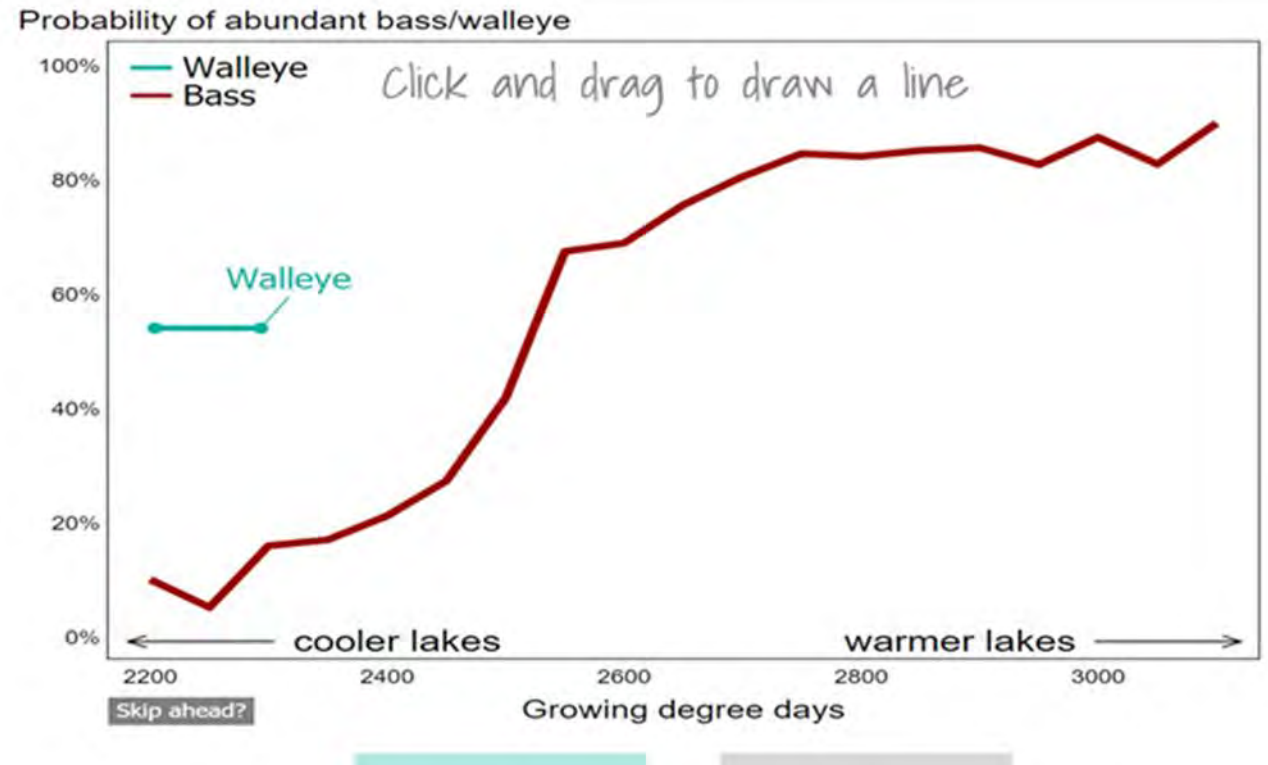
Habitat restoration outcomes under extreme weather events and climate change



The protection and management of large landscapes is an important strategy to buffer fish and wildlife from changing environmental conditions. States invest heavily in the restoration of lands, converting marginal lands to prime habitat. However, a longer growing season, floods, and drought reduce the viability of some restorations. How can we increase the long-term success of habitat restorations?

LAKE AND STREAM THERMAL HABITAT UNDER CLIMATE CHANGE

- USGS, WI DNR, MN DNR
- Modeled historic and future temperature in WI lakes
- Predict declines in natural reproduction of walleye and expansion of bass dominance
- Identified 100 resilient lakes for protection to support naturally reproducing walleye



NEW INLAND LAKE EFFORTS

Expanded Lake Thermal Habitat

- Working with Midwest Glacial Lake Partnership
- Understand changing temperature profiles of glacial lakes
- Will include North Dakota and South Dakota

“Hyperscale” Lake Modeling

- Increase model accuracy for high priority lakes
- Produce lake temperatures at lake, state, and regional scales
- Estimate the distribution and abundance of important fish species

CLIMATE IMPACTS ON DEER AND MOOSE

- Identified key topics with MAFWA Climate Change Committee
- Literature review related to WSI, disease, forest change, etc.
- Addressed key changes in snow, winter temperature, etc.
- Addressed regional variation in trends



SOURCING PLANTS FOR CONSERVATION AND RESTORATION

- Working with Prairie Reconstruction Initiative Advisory Team (state, federal, NGO)
- Zones based on historic climate and precipitation patterns
- Risks of maintaining the current practices of sourcing, unintended introductions of pests and invasive species, adaptation to future environmental conditions
- Minnesota, Iowa, North Dakota and South Dakota



OTHER HIGHLIGHTS

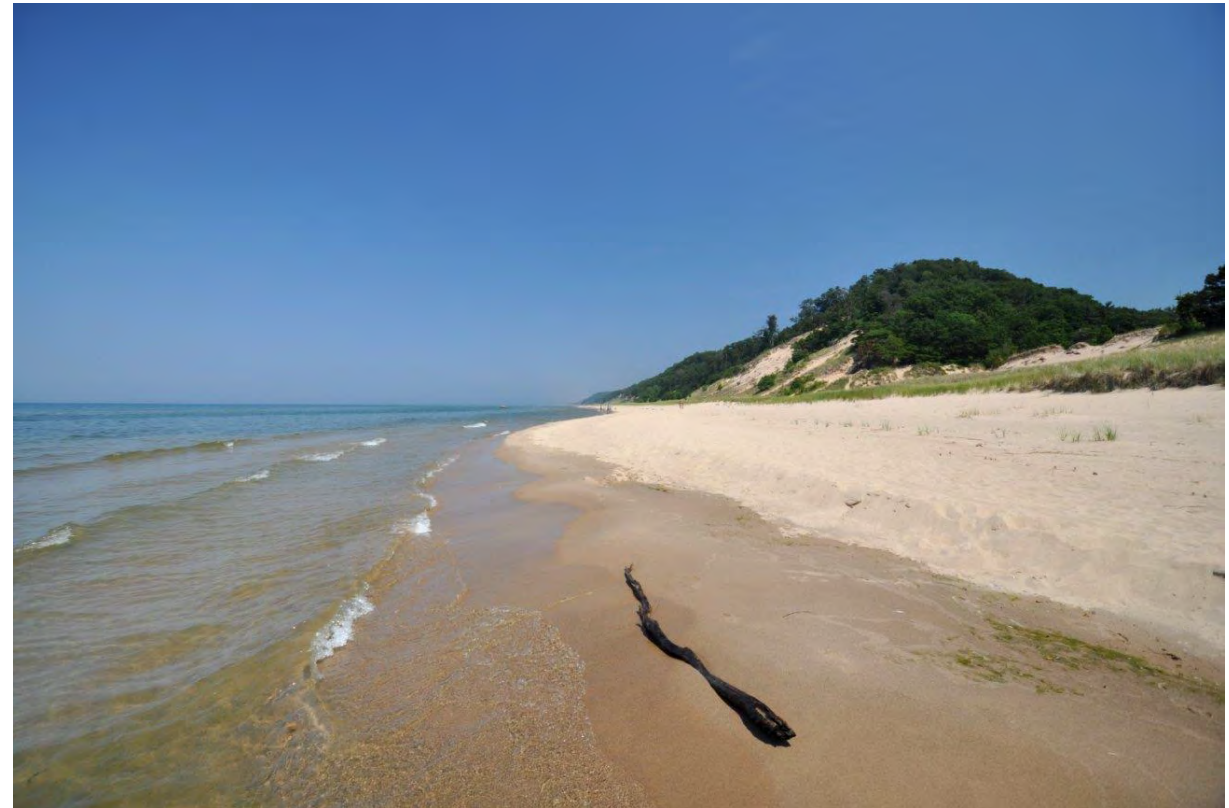
- **Prairie Pothole Habitat:** how will potholes respond to change, with a focus on salt accumulation and water levels
- **Wildlife Adaptation Menu:** synthesis of management options; workshops with wildlife managers
- **Wildlife Disease:** identify emerging issues related to climate change and priority research areas



Neiles

OPPORTUNITIES

- Continued engagement on Stakeholder Advisory Committees
- New priorities to inform new science plans
- Workshops, trainings, webinars
- Learn more:
<http://necsc.umass.edu>
<http://nccsc.colostate.edu>



Overview of WS NWRC Bird and Predator Research





Wildlife Services Mission

To provide Federal leadership and expertise to resolve wildlife conflicts to allow people and wildlife to coexist



Expertise



- Wildlife Biology
- Zoology
- Physiology
- Economics
- Pharmacology
- Epidemiology
- Virology
- Wildlife Disease
- Ecology
- Chemistry
- Toxicology
- Ecology
- Immunology
- Statistics
- Chemical/Drug Registration (EPA & FDA)
- Veterinary Medicine
- Wildlife DNA Forensics
- Population Modeling
- Reproductive Physiology
- Animal Care
- Animal Behavior
- Wildlife Telemetry
- Computer Science
- Technology Transfer
- Quality Assurance
- Information Transfer
- Legislative & Public Affairs

Products



- Baits
- Toxicants
- Lures
- Contraceptives
- Vaccines
- Repellents
- Delivery Systems

- Hazing Methods
- Capture Methods
- Surveillance Methods
- Ecological Information
- Population modeling
- Economic Assessments



Blackbird Research

Prairie Pothole Region



547,341 acres of
cattails

+



720,000 acres of
sunflower

=



25 million blackbirds

Annual Sunflower Damage in PPR
> \$3.5 million annually
Regional damage 2%
Local damage > 20%



Avian Repellents – Application Strategy

Laboratory Studies

(AQ-based repellents
80% repellency)



achenes 100% coated
disk flowers absent
loose achenes
confined birds

(Werner et al. 2009; Avery et al. 1997)

Field Studies

(dependent on application method)



achenes 0-25% coated
disk flowers present
embedded achenes
downward facing heads
free-ranging birds

(Kandel et al. 2009; Werner et al. 2014; Niner et al. 2015)



Objective:

To effectively transfer
repellent efficacy found in lab
studies to the field

Roost Management – “Sonic Nets”



Sonic Net

- speakers produce sound frequencies overlapping those used in blackbird communication
- reduces the ability of birds to communicate, increasing perceived risk and encourage birds to roost elsewhere

Objective:

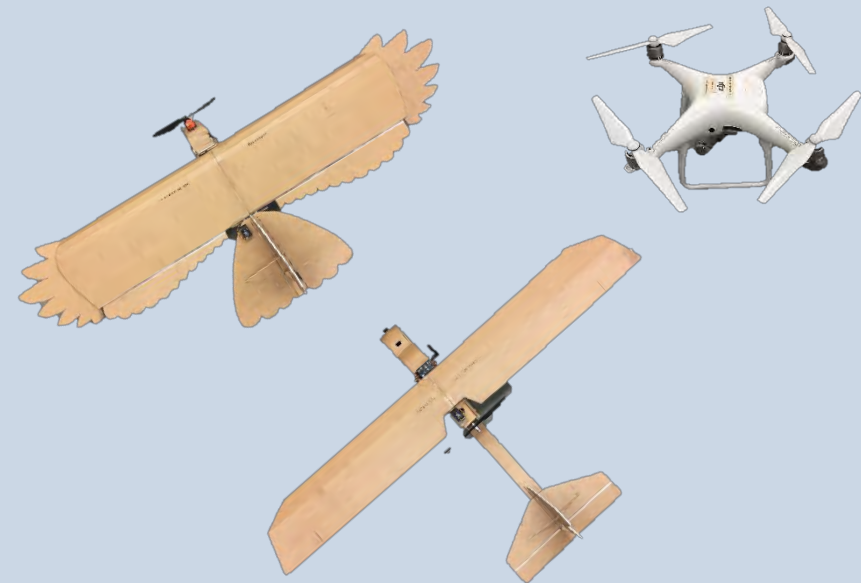
To test if strategic deployment of a “Sonic Net” in a cattail roost can reduce blackbird flocks, thus reduce local crop damage.



Unmanned Aerial Systems – Best Practices



Objective:
To identify features and flight dynamics
that enhance UAS as hazing tools to
disperse and deter flocks of birds



Predator Research

Livestock Protection



Objective

Evaluate efficacy of guard dog breeds in protecting livestock against large carnivores (grizzly bears and wolves)

APHIS Toxicants

	Sodium Cyanide	1080	Sodium Nitrite	PAPP para-aminopropiophenone
Status	APHIS Registered	APHIS Registered	Registration Submitted (swine)	Research Phase
Mode of Action	Krebs Cycle Inhibitor	Krebs Cycle Inhibitor	Oxygen Depletion	Oxygen Depletion
Humaneness: Time to Death	10 min	< 12 hr	1-2 hr	1-2 hr
Humaneness: Awareness	Transient	???	Low	Low
Antidote	prevention	prevention	Methylene Blue	???
Challenges	Lost Registration	Lost Registration	Palatability Loading	Vomiting Loading
Registration Costs	Low: Maintenance	Low: Maintenance	Low - Medium ~ \$ 1M - \$ 4 M	Medium ~ \$ 5M



Goals for Pesticide Development



- **Species specificity**
- **Humane**
- **Low environmental burden**
- **Easy application on landscape scale**
- **Cost effective**
- **Social acceptance**
- **Regulatory clarity**

Biopesticide Development

Silencing genes: siRNA Technology

Lethal and non-lethal management



DNA

transcription

RNA

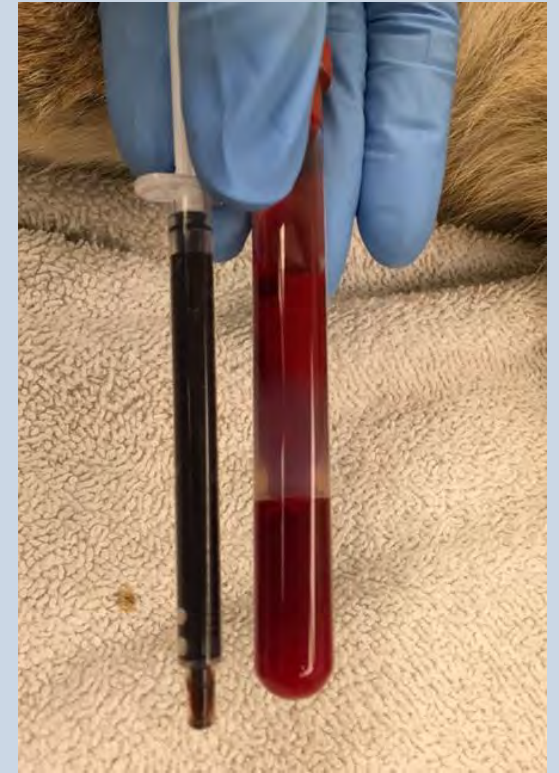
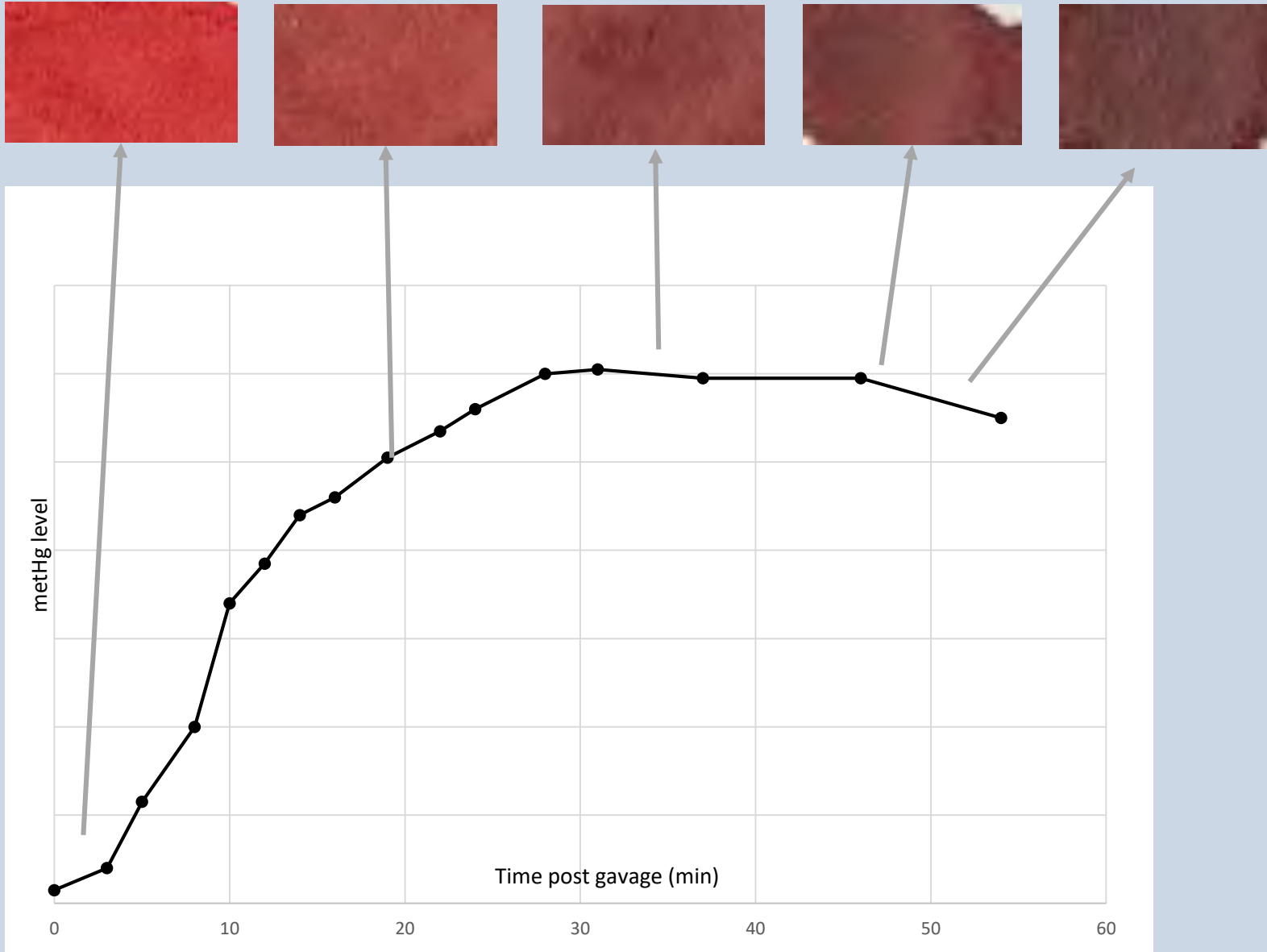
translation

Protein

Thanks



PAPP (para-aminopropiophenone) Efficacy



Hunting, Angling and Outdoor Recreation Recruitment, Retention and Reactivation Plan



Message from U.S. Fish and Wildlife Service Midwest Regional Director Tom Melius

First, I'd like to thank our Service teams who stepped up to create the Midwest *Hunting, Angling and Outdoor Recreation Recruitment, Retention and Reactivation Plan*. It began as two distinct efforts to address recent Department of Interior Secretarial Orders 3356, 3365, 3366; and increase support and engagement in ongoing state and tribal led Recruit, Retain and Reactivate (R3) activities.

There is overlap between these efforts and a great opportunity for collaboration. With that in mind, our region has created a single plan to develop, implement and evaluate our work to recruit, retain and reactivate hunters and anglers. This draft plan represents our first attempt. We are now seeking input from states, tribes, appropriate non-governmental entities and our own employees to help refine and improve the plan.

To states and tribes, I want to emphasize that we understand and respect your expertise and authority. The plan is meant to support and enhance your hunting, fishing and outdoor recreation efforts as appropriate. That is why your review and comments on this draft plan are so critical.

There are many internal agency actions outlined in this plan that support the Department of Interior Secretarial Orders and provide ways for agency employees to become more engaged in expanding hunting, angling and outdoor recreational opportunities on public lands. That is why we are also seeking employee feedback to improve the draft plan.

Lastly, non-governmental organizations, ranging from traditional conservation groups, to outdoor retailers and manufacturers, have a role in making outdoor recreation more accessible and enjoyable for all Americans. We want to hear from these groups as well.

Thank you for taking the time to review this draft plan and provide us with any comments, thoughts or ideas you may have. To share your thoughts with us, please feel free to contact any U.S. Fish and Wildlife Service team member listed on page 5 of this draft plan.

Sincerely,
Tom Melius

June 22, 2018

Hunting, Angling and Outdoor Recreation Recruitment, Retention and Reactivation Plan

U.S. Fish and Wildlife Service, Midwest Region

Today, more than 40 percent of Americans participate in outdoor recreation and approximately 150 million acres of U.S. Fish and Wildlife Service lands are open to hunting, fishing or other recreational pursuits across the country. Here in the Midwest, national wildlife refuges, waterfowl production areas and other protected areas are a huge part of these traditions, yet hunting and fishing are either in decline or flat lining. We welcome sportsmen and women of all backgrounds and abilities to experience challenging hunting, fishing and other kinds of recreation in amazing places, we can be more effective when we collaborate with our partners.



A hunter takes aim at a deer from a blind. Photo by Tina Shaw/USFWS.

PURPOSE

The purpose of this plan is to identify, coordinate and align Midwest Region resources to aid in existing hunter, angler and outdoor recreation recruitment, retention and reactivation efforts with those of our partners throughout all levels of our agency. Implementing the plan's recommendations will ensure that we are supporting state, tribal and nongovernmental organization partners in their ongoing efforts. Collaborating on this shared mission will help support outdoor recreation across the region and sustain wildlife and fisheries conservation into the future. This plan will guide our progress, and help to evaluate our success from a cross programmatic, "one Service" perspective that melds all U.S. Fish and Wildlife Service programs from our region.



Fishing in northern Wisconsin for walleye. Photo by Joanna Gilkeson/USFWS.

INTRODUCTION

At the U.S. Fish and Wildlife Service, we play a fundamental role in providing Americans quality opportunities for hunting, fishing and outdoor recreation. We do this in a variety of ways. Our biologists manage healthy habitats to support native fish and wildlife. Our land managers, law enforcement professionals and maintenance crews support safe access to publicly owned lands and waters, providing millions of acres for outdoor recreation. Our grants specialists provide more than a billion dollars annually to state and tribal partners to bolster hunting, fishing and outdoor recreation opportunities through land acquisition and wildlife and fisheries management. Our fisheries biologists stock hundreds of millions of fish each year to increase fishing opportunities. Additionally, we oversee hunting regulations and help guide bird conservation actions that ensure the long term viability of bird populations across North America. Across our agency, we support the interests of hunters and anglers and provide many other wildlife-dependent outdoor recreation activities like birding, wildlife photography, hiking, boating and opportunities to learn about these special places.

Participating in outdoor recreation has multiple benefits – it contributes to the economy, to human health and to the management of wildlife populations and their habitats. In 2016, more than 100 million Americans, roughly 40 percent of the population, participated in hunting, fishing and/or another outdoor-oriented recreation. Outdoor enthusiasts spent more than \$156 billion on travel, equipment and hunting and fishing licenses in 2016. Additionally, excise taxes paid on hunting and fishing equipment contributed approximately \$1.2 billion in direct support of fish and wildlife conservation and access to participation in every state and U.S. territory. Furthermore, a growing body of scientific research suggests that people are healthier and happier when they spend time in nature.

Early in the 20th century, sportsmen and women recognized the critical need for a significant and sustainable source of funding for wildlife management. The revenue generated through the sale of state hunting licenses, as well as hunting and shooting equipment, has provided the foundation for the most successful model of wildlife conservation in the world. A similar movement followed in the mid-20th century to provide a sustainable funding source for fisheries conservation and management. Despite the multitude of opportunities and efforts across public agencies, the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation continues to find that participation in hunting and angling has steadily declined in the U.S. since the 1980s. In 2016, state hunting and fishing license data showed that 11.5 million, or about five percent of Americans, participated in hunting. Roughly 35.8 million Americans, which translates to 14 percent of U.S. citizens, fish. In the short-term, hunters have declined from 13 million in 2001, whereas angler number are more stable. The decline in these activities, which sustains a multibillion-dollar industry and provides the primary financial support for state-level wildlife and fisheries conservation in the U.S., poses an increasing threat to the major funding mechanism of wildlife conservation.

The U.S. Fish and Wildlife Service Midwest Region – comprised of eight states and 36 federally recognized tribal governments – has a strong history of hunting and fishing participation. The longstanding outdoor traditions of Midwesterners have paved the way for wildlife, fisheries and ecosystem conservation. In parallel with national trends, the Midwest Region has seen a shift from traditional outdoor uses (e.g., hunting and fishing) to other outdoor recreation activities. Diversifying outdoor recreational uses creates pressures for generating revenue to support these alternatives on federal, state, tribal and other public lands.



Ring-necked pheasant. Photo by Karie Reishus/USFWS.

Hunting participant demographics have stagnated and continued to be dominated by white males in the Baby Boomer Generation. Other outdoor recreation activities, like

fishing, have seen recent increases in participation among multiple demographics. Nonetheless, national, state and local efforts have done little to recruit new participants from diversified demographics. As a result, these efforts have struggled to keep up with the changing demographics of America and to provide potential sportsmen and women with the various learning opportunities they need to develop from an interested observer to an active participant. In recognition of this, state fish and wildlife agencies, tribes, non-governmental organizations and outdoor industry have invested heavily in various Recruitment, Retention and Reactivation Initiatives, known as "R3." Unfortunately, the results of those efforts over the last few decades have met with limited success. The general consensus among stakeholders for sustaining the population of hunters, anglers and outdoor recreationists is to adopt a more strategic and innovative approach. Partnerships within the stakeholder community, in conjunction with an integrated framework to identify needed strategies and effectiveness measures, are important to stabilize and increase the number of hunters, anglers and outdoor recreationalists.



Kayaking at Tamarac National Wildlife Refuge. Photo by USFWS.

Coordination of local, regional and national efforts are led by the [Council for the Advancement of Hunting and Shooting Sports](#) and the [Recreational Boating and Fishing Foundation](#). Both organizations are directed by members from the [Association of Fish and Wildlife Agencies](#), industry representatives and nongovernmental organizations. States are continuing to create step-down R3 plans under the guidance of Council for the Advancement of Hunting and Shooting Sport and Recreational Boating and Fishing Foundation. These plans provide clarity regarding where R3 initiatives are needed and identify the resources required to support those efforts.

We are poised to be a strategic player nationally, regionally and locally by partnering with states, tribes and nongovernmental organizations in these efforts. This document sets a direction for our region to support this collective group of partners, as well as

perform internal actions to increase the knowledge and awareness of hunting, fishing and outdoor recreation among Service employees.

Recognizing the importance of hunting, fishing and wildlife-dependent recreation, and in response to Secretarial Order 3356, the Midwest Region launched the Midwest Region Outdoor Access Initiative in December 2017.

Three teams make up the initiative:

Advisory Team:

The Advisory Team is comprised of regional leadership who ensure national effort integration, set priorities, secure resources, eliminate barriers and are accountable for deliverables.

Charlie Blair (Co-chair), National Wildlife Refuge System
Jim Hodgson (Co-chair), Wildlife and Sport Fish Restoration
Craig Czarnecki, Science Applications
Tom Cooper, Migratory Birds
Chuck Traxler, External Affairs

Hunting, Fishing and Outdoor Recreation Team:

The Hunting, Fishing and Outdoor Recreation Team is charged with review of regional and station-level policies that unnecessarily complicate or impede public access, or do not support R3 efforts.

Charlie Blair (Team Sponsor), National Wildlife Refuge System
Deb Beck (Team Lead), National Wildlife Refuge System
AnnMarie Krmpotich, Science Applications
Tina Shaw, External Affairs
Maggie O'Connell, National Wildlife Refuge System
Rob McGinn, Budget and Administration

R3 Team:

The R3 Team will develop and implement plans to support state and tribal R3 plans and other partner outdoor recreation plans.

Jim Hodgson (Team Sponsor), Wildlife and Sport Fish Restoration
Kyle Daly (Team Lead), Wildlife and Sport Fish Restoration
Melissa A. Clark, External Affairs
AnnMarie Krmpotich, Science Applications
Cathy Nigg, National Wildlife Refuge System
Dan Lovdahl, Budget and Administration
Anna Sidie-Slettedahl, Migratory Birds
Tim Smigielski, Fisheries and Aquatic Conservation

This R3 plan guides implementation of the priorities of the Midwest Outdoor Access Initiative. The Outdoor Access Initiative Teams are charged with completing and

implementing this plan across the region, therefore increasing public access to U.S. Fish and Wildlife Service lands, solidifying state, tribal and nongovernmental organization partnerships and increasing capacity of the Midwest Region to engage in R3 activities.



A white-tailed deer taken during a non-ambulatory hunt. Photo by Tina Shaw/USFWS.

GOALS

1. Increase public participation in hunting, angling and outdoor recreation in the Midwest Region in coordination with state, tribal, nongovernmental organizations and industry partners.
2. Increase public support of hunting, angling and outdoor recreation in the Midwest Region in coordination with state, tribal, nongovernmental organizations and industry partners.

IMPLEMENTATION STRATEGIES

(*indicate actions that will be partially or fully implemented at field stations)

Objective 1

Increase the capacity of the Service's Midwest Region to plan and implement R3 efforts.

Priority Actions:

1. Identify a Midwest Region R3 Coordinator position that serves as the region's point of contact for R3 efforts.
 - a. By July 1, 2018 identify a Midwest Region R3 Coordinator.
2. Identify key stakeholders among agency R3 efforts. This should include Service cross-programmatic contacts, state R3 coordinators, nongovernmental organization R3 contacts, tribal contacts, tribal treaty hunting organizations and outdoor industry partner contacts.
 - a. By July 1, 2018 compile a list of R3 stakeholders.
3. Invite representatives from Wildlife Management Institute (WMI), the Council for the Advancement of Hunting and Shooting Sports (CAHSS), the Recreational Boating and Fishing Foundation (RBFF) and state and tribal R3 Coordinators to provide information and training on the Outdoor Recreation Adoption Model (ORAM) and national R3 efforts to regional leadership.
 - a. Contact WMI, CAHSS, RBFF, tribal and state R3 coordinators by August 1, 2018 with invitation to Midwest Regional Office.
 - b. Coordinate with Regional Directorate Team members throughout September 2018 for their involvement in a meeting with invited representatives and R3 team.
4. Create a Midwest Region cross-programmatic R3 Team.
 - a. Form R3 team by January 1, 2018.
 - b. Complete R3 Team Charter by February 1, 2018.
 - c. Hold monthly R3 Team meetings starting January, 2018.
5. *Inventory current Service R3 programs/efforts, R3 Team assists in evaluation of these programs and provide advice to practitioners.
 - a. Complete inventory of hunting, fishing, documented tribal activities and outdoor recreation programs occurring on Service lands that could be considered to be R3 activities by August 1, 2018.
 - b. Provide an ongoing tally of R3 events sponsored by the Service (e.g., held on Service lands, hosted and Service facilities) for reporting purposes.
6. *Support partner R3 programs by providing access (e.g., land and facility) resources for R3 programs.
 - a. Coordinate with Midwest Outdoor Access Initiative Teams to initiate discussions of R3 programs prior to August 1, 2018.
 - b. Coordinate with Midwest Region Hunt and Fish Chief throughout 2018 to assist with increasing access to Service lands.
 - c. By August 1, 2018, connect Service managers with state, tribal and nongovernmental organization R3 coordinators by providing contact lists to Service staff and stakeholders.

7. Coordinate with state, tribal and nongovernmental organization partners to implement strategies contained within the Midwest Region R3 Plan.
 - a. Implement regular communication and coordination with State R3 Coordinators, tribal contacts, CAHSS, RBFF and other relevant parties with quarterly calls.
 - b. Coordinate with Midwest Outdoor Access Initiative Teams, Regional Directorate Team members, WMI, RBFF, CAHSS states, tribes and nongovernmental organizations to assist in planning a Midwest R3 summit by spring 2019.
8. Coordinate with state and industry partners to develop a "Partner with the Excise Tax Payer" Program.
 - a. Implement regular communication with Midwest Region industries that pay into Pittman-Robertson Wildlife Restoration Act and Dingell-Johnson Sport Fish Restoration Act.
9. Identify funding sources and in-kind contributions to provide partners with resources to implement R3 programs.
10. *Identify R3 training needs for Service employees. Ensure project leaders, visitor services staff and anyone engaged with public outreach in the Midwest Region understand the ORAM model, tribal trust responsibility and R3 objectives.



Young children choose their bows for an archery lessons. Photo by USFWS.

Objective 2

Improve external partnerships and coordination among the Service, state agencies, tribal governments, and nongovernmental organizations to identify what gaps the Service can fill in the Outdoor Recreation and Adoption Model (ORAM).

Priority Actions:

1. *Service employees participate in state, tribal, regional and national R3 summits and workshops.
 - a. At least one Midwest region Service representative will attend each state, tribal, regional, and national R3 summits and workshops.
2. Connect State, tribal and nongovernmental organization R3 coordinators with Service employees in respective programs/states.
 - a. By August 1, 2018, connect Service managers with state, tribal and nongovernmental organization R3 coordinators by providing contact lists to all stakeholders.
3. *Inventory current R3 programs, where they exist and who implements the programs.
 - a. Complete inventory of R3 programs occurring on Service lands by August 1, 2018.
4. Partner with states, tribes and nongovernmental organizations to identify target audiences for R3 programs.
 - a. Coordinate with state, tribes, and nongovernmental organization partners to identify target audiences for R3 programs on Service lands by September 1, 2018.
5. Assist Service employees in description of the primary purpose of an R3 program (e.g., increase awareness, interest or skills).
 - a. By October 1, 2018, describe primary purpose of all R3 programs occurring on Service lands in the Midwest Region.
6. Coordinate with state and industry partners to develop a "Partner with the Excise Tax Payer" events in the Midwest Region.
 - a. Hold at least one "Partner with the Excise Tax Payer" event annually.
7. Identify evaluation tools available for Service R3 programs (must be OMB approved).
 - a. Throughout 2018, coordinate with state, tribal and nongovernmental organization partners to align data collected at Service hosted R3 programs and adopt state/nongovernmental organization evaluation tools set up for their programs.
 - b. *Provide training to Service employees on evaluation tools for R3 programs throughout 2018.
8. Write evergreen feature stories about hunting, angling and outdoor recreational opportunities for Service websites and the media (e.g., [Valuing the hunting tradition](#), [Mobility impaired hunting](#), [Mentored youth hunts](#)).
 - a. By September 1, 2018, complete an inventory of outlets (e.g., Outdoor News, DNR publications, tribally-owned newspapers) for opportunities as well as existing communication messaging.

- b. External Affairs will continue to work with regional leadership and field stations to develop feature story content, create media availabilities in the field and assess website metrics (e.g., time on page) as appropriate and with the objective of better tailoring story content for niche audiences.
- 9. *Develop a communication process internally and cross-programmatically to and from the field.
 - a. By August 1, 2018, develop communication plan for carrying messages to and from the Outdoor Access Initiative Teams and Service employees.



Tribal members discussing target practice technique. Photo courtesy of 1854 Treaty Authority.

Objective 3

Increase access and opportunity for outdoor recreation.

Priority Actions:

1. *Inventory current hunting and fishing programs on Service lands in collaboration with the Regional Hunting, Fishing and Outdoor Recreation Team.
 - a. By August 1 2018, complete inventory of current hunting, fishing and outdoor recreation programs occurring on Service lands.
2. *Expand hunting, fishing, and other outdoor recreational capacity on Service lands by partnering with states, tribes and nongovernmental organizations, when appropriate.
 - a. By August 1, 2018, connect Service land managers with state, tribal, and nongovernmental organization R3 coordinators by providing contact lists to all stakeholders.
3. *Increase access to hunting, fishing and outdoor recreation opportunities on Service lands, when appropriate.
 - a. Coordinate with Midwest Hunting and Fishing Chief, Outdoor Access Team, and Service managers to assess access on Service lands.

4. *Prioritize habitat retention, restoration, and enhancement efforts that include human dimension aspects; i.e., hunter/angler access and proximity to human population centers.
5. *Identify and document barriers to outdoor recreation on Service lands in the Midwest Region.



Iowa youth trapshooting championships. Photo courtesy of Iowa Department of Natural Resources.

Objective 4

In-reach: implement hunting, fishing and outdoor recreation activities within the Regional Office and other Service offices to increase the knowledge and appreciation of hunting, fishing and outdoor recreation among Service employees. Transfer these ideas to field stations.

Priority Actions:

1. As a model for field stations, the Regional Office in partnership with Minnesota Valley National Wildlife Refuge, implement an archery program, including training of instructors.
 - a. Utilize National Archery in Schools Program archery kit at Minnesota Valley National Wildlife Refuge to host an archery program by September 2018.
2. As a model for field stations, the Regional Office will host a series of monthly "in-reach" activities including brown-bag talks, "learn to hunt/fish" talks, fishing and hunting trips, birding, hiking, tribal culture, etc. for interested employees.
 - a. Coordinate and plan at least 12 "in-reach" activities annually for Service employees.

3. Create list of interested hunting, fishing and outdoor recreation mentors to begin creating a social support structure for interested audiences.
 - a. By August 1 2018, compile a list of willing mentors for hunting, fishing and outdoor recreation.
4. As a model for field stations, the Regional Office will initiate an equipment loaner program to provide equipment to interested employees who wish to start hunting, fishing or other outdoor recreation, housed at the Regional Office.
 - a. By August 1, 2018, start collecting items for the equipment loaner program.
5. As a model for field stations, the Regional Office will partner with organizations to provide opportunities to learn boating safety skills.
6. As a model for field stations, the Regional Office will partner with organizations to provide opportunities to learn tribal subsistence practices in treaty reserved areas.
7. Provide information to employees of local outdoor recreation opportunities, including learning opportunities that are available through other organizations.

HAPPY RETIREMENT



2018

Tom Melling

USFWS



MIDWEST

Association of
Fish & Wildlife
Agencies

SPECIAL RECOGNITION
AWARD

Presented To

TOM MELIUS
USFWS

In Recognition Of
Exceptional Cooperation In The
Conservation of Wildlife
In The Midwest

Midwest Association
of Fish and Wildlife Agencies

2018



MIDWEST

Association of
Fish & Wildlife
Agencies



**State
of the
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**ILLINOIS
STATE REPORT
JUNE 2018**

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Fish and Wildlife Highlights

Illinois Asian Carp Actions in Northeastern Illinois

The Illinois Department of Natural Resources (IDNR), as a major partner in the Asian Carp Regional Coordinating Committee, continues to work above and below the Corps of Engineers' electric barrier to monitor and prevent the upstream migration of Asian carp on the Illinois River and in the Chicago Area Waterway System (CAWS). Some highlights (as of May 2017) from our coordinated Asian carp efforts are as follows:

- Contracted harvest efforts have contributed to over 6.3 million pounds of Asian carp removed from the IWW below the Electric Dispersal Barrier since 2010. This tonnage was comprised of 90,469 Bighead Carp, 681,743 Silver Carp, and 4,668 Grass Carp
- Asian carp mean density in Dresden Island Pool appears to have decreased by an estimated 93% from 2012 to 2017. This is a potential result of the continued commercial harvest efforts in the IWW.
- One Silver Carp was captured above the Electric Dispersal Barrier in the Little Calumet River in 2017.
- A new technique (Chinese Unified Method) to increase efficiency within a given lake/waterbody was deployed during 2016, 2017, and 2018 with nearly 250,000 lbs of Asian carp removed in these efforts alone.
- Coordination between IDNR and other local, state, and federal partners on this issue remains high.
- Recent model results suggest heightened removal, both in the upper Illinois Waterway from contracted efforts and intensified commercial efforts in the lower Illinois and Mississippi rivers may further aid in prevention of spread and local negative impacts to native species.
- A recent report on Asian Carp business process analysis provides insights into future comprehensive management strategies: https://www.ifishillinois.org/programs/CARPRReport_news.html

For further details regarding ongoing efforts: www.asiancarp.us

Illinois Alligator Gar Reintroduction Program

Alligator Gar (*Atractosteus spatula*) populations have been declining within their historic range for at least the past 50 years, and are considered to be extirpated from much of the northern reaches (Nature Serve 2015). Declines have been attributed to several factors, most notably over-exploitation and loss of important backwater spawning habitats from the construction of levees and lock-and-dams beginning in the early 1900s. While no single factor can be identified as the definitive cause for the decline, it is likely that a combination of these factors over time resulted in the extirpation of the Alligator Gar from Illinois.

The Alligator Gar was not regulated or protected in Illinois prior to 1977. From 1977 to 1994, the species was listed as a state-threatened fish under the Illinois Threatened and Endangered Species Act. In 1994, the Alligator Gar was delisted and considered to be extirpated.

Illinois is now conducting efforts and activities necessary to successfully re-establish and extensively manage Alligator Gar populations in Illinois. As we move forward those efforts will be documented through annual progress and achievement reports for each management objective detailed in the Reintroduction Plan. Our plan is considered to be an evolving document and will be used as an adaptive management tool by Illinois Department of Natural Resources, Division of Fisheries.

Community Outreach and Resource Enhancement (formerly Urban Fishing) Program

The Community Outreach and Resource Enhancement Program (CORE), with only 3 full time coordinators and 20 summer fishing clinic instructors conducted 951 summer fishing programs with 18,932 participants and 268 aquatic education (non-fishing) events with 36,243 in attendance. Most of the participants were young anglers and students. In addition, the 142 “Access to Fishing” loaner sites throughout the state loaned out fishing equipment 13,752 times. In total the Urban Fishing Program, with three full-time coordinators, 20 summer interns and their volunteer network, held or sponsored a total of 1,771 fishing and non-fishing programs for nearly 90,285 participants in 2016.

Illinois River

The Illinois River Program gained a full time Fisheries Biologist for the first time since the early 2000’s in April 2017. The Program stocked 7,770 4” smallmouth bass fingerlings, 3,200 1.5” smallmouth bass fry, 51,000 1.5” channel catfish fry, and over 11.6 million 1.4” sauger fry into the Illinois River via the State Hatchery System. River wide spring hoop net and fall electrofishing surveys are conducted on an annual basis to assess Illinois River sportfish status and trends, which allow us to make sound management decisions to maintain the fishery. The 2017 fall electrofishing survey showed excellent recruitment of sauger in the middle and upper Illinois River, as well as excellent white bass and channel catfish recruitment in the middle and lower Illinois River. The fall electrofishing survey also showed good numbers of catchable sized smallmouth bass, largemouth bass and black crappie in the middle and upper Illinois River in 2017.

Lake Michigan Program

Recreational anglers expended 358,545 angler-hours to harvest 9,568 yellow perch and 88,642 trout and salmon from the Illinois waters of Lake Michigan last year. The sport fishery remains stable; estimates of fishing effort decreased by 12%, salmon and trout harvest decreased by 2% and yellow perch harvest decreased by 15% compared to the previous year. Yellow perch harvest remained near historic lows for the spring-summer season (March-September), but a strong 2015 year class of perch contributed to a strong fall-winter fishery off Chicago.

IDNR Fish Hatchery System Report

The IDNR operates three state hatcheries: Jake Wolf Memorial Fish Hatchery, Little Grassie Fish Hatchery and the LaSalle Fish Hatchery. The hatchery section’s mission is to maintain, restore, establish, or sustain sport fish populations in lakes, rivers and Lake Michigan in order to diversify sport fishing opportunities through supplemental production and stocking of hatchery reared fish. Fishing continues as one of the most popular outdoor activities in Illinois

and direct spending by anglers in 2011 was nearly one billion dollars, which generated approximately three billion to the State's economy.

Fish produced by the hatchery system are utilized in three types of stockings. They are the stocking of newly impounded or chemically rehabilitated public waters, supplemental stocking of existing fish populations with poor recruitment, and the establishment and maintenance of sport fisheries in existing waters.

In FY17, the hatchery system produced and stocked into state and public waters a total of 18,117,807 fish, including alligator gar, black crappie, bluegill, blue catfish, brown trout, channel catfish, coho salmon, Chinook salmon, largemouth bass, muskellunge, northern pike, rainbow trout, redear sunfish, sauger, striped bass hybrids, smallmouth bass, steelhead trout, walleye, and walleye-sauger hybrids.

Region III Lakes and Reservoirs

With the coordination of the district fisheries biologist and the help of the U.S. Army Corps of Engineers, anglers and fishing clubs statewide, and local/regional businesses and industry the Lake Shelbyville Fish Habitat Alliance was formed to enhance the quality of the fishery for anglers and the economic benefit of local communities. Since December 2016 (<1.5 years), the many volunteers that comprise the LSFHA has acquired local and statewide donations and funds to build and place 212 Lake Shelbyville cubes (66%) and Georgia cubes (33%) and 15 recently-built artificial stumps in Lake Shelbyville. An addition 150 cubes and 50 stumps are scheduled to be placed in the second half of 2018. Through sonar evaluation, angler catch, and Illinois Natural History Survey electrofishing, we know that the cubes are attracting large numbers fish (crappie and others). Anglers have caught crappie off of them less than an hour after they were placed! The INHS will conduct further evaluations. In addition the LSFHA applied for and successfully obtained a \$30,000 grant from Friends of Reservoirs, which should be allocated in late summer 2018 to build hundreds more cubes. Other grants and funding sources are being sought to build many thousands of additional cubes.

Two aquatic plant nurseries, one at Lake Shelbyville and one at Lincoln Trail state Park, were established in 2017 using four large "stock" tanks to raise several different desirable species. Many hundreds of plants were produced and then planted in Lake Shelbyville, Walnut Point Lake, and Lincoln Trail Lake. This is part of a continuing effort to develop and diversify habitat to improve the quality and stabilize fisheries, reduce bank erosion, and improve water quality. Efforts will continue in 2018.

Walleye/sauger production in the Fins and Feathers Nursery Pond on Lake Shelbyville has been more than doubled with the initiative of the district biologist, advice of IDNR Hatchery staff, and cooperation of the U.S. Army Corps of Engineers. In 2014, a record 256,000 sauger were produced in the 6.5 acre pond, resulting in a great fishery on the lake in 2016-2018. In 2016, 164,000 walleye were produced and stocked into the lake. The Division of Fisheries hatcheries heroically supply an additional 110,000 walleye for the lake annually and periodically stock "extra" sauger (117,000 in 2017).

An "experimental" maximum length-limit fishing regulation was enacted for bluegill and redear sunfish on Walnut Point Lake in Walnut Point State Park. Anglers are allowed 20 bluegill/redear sunfish per day, of which, only 5 can be 8" or longer. In comparison to pre-regulation years this new type of regulation has produced significantly ($p < 0.02$) more large bluegill (>8") in IDNR electrofishing surveys. Anglers have been very receptive to the regulation as fishing participation has actually increased on the lake. An educational brochure has been

developed and many thousands of copies have been distributed. A presentation on this management evaluation has been accepted for the American Fisheries Society annual meeting in August.

As part of a continuing multi-dimensional management project, approximately 1,300 trees were cut and felled into Walnut Point Lake (52 acres). IDNR biologists from all ORC Divisions, local IDNR Land's staff, Illinois Natural History Survey Research biologists and technicians, and Natural Heritage "residents" helped make this project a success. The goal is to enhance light penetration in the littoral zone of the lake and adjacent woodlands by eliminating overhanging trees to enhance aquatic plant and woodland flower growth. This will hopefully negate severe water-quality issues that has plagued the lake in recent years. The Illinois Natural History Survey's, Kaskaskia Biological Station staff, will monitor benefits to the fishery that the structural habitat value the trees provide. Additional aquatic plants were introduced by IDNR Fisheries staff to help improve water quality and provide fish habitat.

In coordination with the Lake Shelbyville project U.S. Army Corps of Engineers staff, district fisheries biologist, Mike Mounce, suggested that fingerling striped bass and hybrid striped bass be acquired to help enhance the fisheries on the project lakes. In 2017, the USACE purchased 30,000 hybrid striped bass fingerlings to exert significant predation pressure on gizzard shad in Wood Lake (30 acres, 100/acre stocked). In addition, the USACE is in the process of purchasing 111,000+ striped bass fingerlings for Lake Shelbyville to enhance the diversity and quality of this fishery. This trophy species will benefit the anglers and economic health of local communities if successful. In coordination with a federal hatchery, these fish should be stocked anytime now and the USACE plans on continuing this stocking for many years.

Chicago Area Waterway Habitat Improvement Project

Friends of the Chicago River (Friends), in partnership with the Illinois Department of Natural Resources (IDNR) received a \$105,003 grant from the Chi Cal Rivers fund to plant native emergent aquatic vegetation in the North Shore Channel and the North Branch of the Chicago River as habitat for fish and other aquatic species. In the Spring of 2017 IDNR Fisheries Staff and FOCR volunteers, including local under privileged high school students planted 2,000 Water Willow and 2,500 Lizard's Tail starts at locations upstream of Oakton Avenue. Lizard's Tail was planted in the shady sandy substrate, while Water Willow was placed primarily in sunny spots with rock and gravel. The plants made it through several summer storms and will be the colonies will be evaluated in 2018. Once established, the plants will create stands of high-quality habitat for aquatic organisms, protect the shoreline from bank erosion, create shelter for aquatic life during floods, and improve the aesthetics of the channel for recreational users. The selected plant species are particularly appropriate for the unique conditions of the Chicago River. As part of the project the IDNR stocked Northern Pike in 2016, a fish species often associated with aquatic vegetation.

FOCR and IDNR received another grant from the Chi Cal Fund in late 2017 to reconnect Mill Creek to the Cal Sag Channel. A natural limestone shelf and a bike trail bridge currently block fish passage into Mill Creek from the Cal Sag Channel, which, like other streams in the CAWS, has experienced a recovery in recent years. In 2016, only five fish species were collected in Mill Creek, despite excellent habitat. Typically a stream the size of Mill Creek should support 20 to 25 fish species. The loss of species richness occurred over time due to poor water quality resulting from septic tank out flows. In recent years, sewer systems have been installed in the surrounding communities and the water quality has improved markedly. However, without connection to a downstream recruitment source, fish cannot repopulate Mill Creek. Rock riffle structures will be

installed in 2018 to facilitate passage over the existing barriers. Pre-project sampling is planned for the spring and summer, prior to construction in the fall. Next season we hope to see many new species in our follow up surveys, taking advantage of the great habitat in Mill Creek.

The Kankakee River Walleye Enhancement Program

The Kankakee River walleye program entered its 18th year with collection of brood fish at Wilmington and Kankakee. A total of 49 brood fish from the Kankakee River were sent to the LaSalle Hatchery where over 1 million eggs were fertilized. Fry will be placed in rearing ponds and will be stocked into the river in May and June, as 2-inch fingerlings. The number of fingerlings placed throughout the Kankakee and Iroquois Rivers averages about 90,000 per year. Electrofishing catch rates were high again this year and many anglers reported having a very successful spring as well. Prior to the stocking program, walleye were in very low abundance.

Des Plaines River Sauger Stocking

IDNR Region II Streams Program released 54,840 Sauger fingerlings into the Upper Des Plaines River on Wednesday. Although there has been a successful stocking program downstream of the Riverside/Lyons area since 2000, this is the first release of Sauger in the upper Des Plaines River. During the past several years, nine of the eleven dams on the Des Plaines River have been removed by IDNR, Army Corps of Engineers, Cook County Forest Preserve and Lake County Forest Preserve. These removals have created many additional miles of natural, free-flowing riverine habitat, allowing for expansion of the stocking program. The recently released Sauger were raised at IDNR's LaSalle Fish Hatchery and were released at Irving Park Road and upstream of the former site of Dam #2. The Des Plaines was once a highly degraded urban stream. Thanks to the Clean Water Act and the cooperation of State, Federal, and Local entities, the river has become the focus of restoration efforts and a great recreational resource for Illinois' urban residents.

Dam Removal Update

In the past 14 years, 30 dam projects have been completed in northeastern Illinois, including 27 removals and three fish passage projects. Fishery evaluations have been completed on a number of these projects and have clearly established the benefits of dam removals. Many miles of stream habitat have been reconnected and fish have rapidly recolonized areas where they were previously absent due to dams. Through the IDNR Statewide Dam Removal Initiative, three additional dams on the Des Plaines River were in the past two years. The two dam remaining on the Upper Des Plaines River are also slated for removal, which would reestablish over 100 miles of free-flowing river, a Nationally significant accomplishment. Another dam removal on the Skokie River was completed in late 2016. The West River Park Dam on the North Branch will be removed this spring and two other North Branch Dams are planned for removal in 2018 and 2019. One dam on the Fox River at Carpentersville is in the early stages of study for removal. The Army Corps of Engineers and the IDNR have an ongoing feasibility study for remaining dams on the Fox River as part of the Section 519 Ecosystem Restoration Program.

Brandon Road Fish Passage Project

Region II Streams Program is collaborating with SIU to determine if species recently appearing in the Upper Des Plaines River originated in the area downstream of the Brandon Lock

and Dam. Analysis of the microchemistry in fin clips can determine the location history of individual fish due to differences water chemistry between target water bodies. Preliminary results found one River Carpsucker collected in the Upper Des Plaines River originated in the lower Des Plaines suggesting passage through the lock. Additional sampling and analysis will be performed in 2018 focusing on larger-bodied migratory fishes.

2017-18 Deer Season Harvest

Hunters in Illinois harvested a preliminary total of 147,730 deer during the 2017-18 seasons, including all methods and special hunts. Male to female sex ratio was 56:44 (46% antlered; 54% antlerless) in the total harvest. There was one less late-winter season (antlerless-only) county open compared to last year. The prior year's harvest was 144,303 (55:45 male to female ratio), and the Illinois record harvest of 201,209 occurred in 2005-06.

Chronic Wasting Disease (CWD)

Forty-nine (49) cases of CWD were confirmed from 8,647 tested samples in 2017-18, a sharp decline (32%) in cases from the past three years (71, 72, and 75 cases in 2015 – 17, respectively). A total of 6,959 hunter-harvested samples revealed 32 CWD-infected animals, while IDNR sharpshooting operations detected 13 CWD-infected deer from 997 collected samples. Historically, most CWD positive cases (66 % of the cumulative total of 734) have come from the original 4 counties (Winnebago, Boone, McHenry, and DeKalb), but this has been shifting in recent years. Nearly half (44%) of cases this past year came from the northwestern Illinois counties of Stephenson (12), Jo Daviess (8), and Carroll (2). Although CWD has spread from 4 counties in 2003 to a total of 17 counties in 2016-17 (no new counties were added this past year), prevalence rates have remained low, approximating 1% throughout the 16 year history of the disease in the state.

Urban Deer Population Control

A total of 41 Deer Population Control Permits (DPCPs), not including permit extensions for additional time and/or deer, were issued to 14 natural resource management agencies, municipalities, arboretums/botanic gardens, federal research facilities, and homeowner associations in eight northern Illinois counties during winter 2017-2018. Permittees were authorized to remove 1,422 white-tailed deer via sharpshooting; 1,256 (88%) deer were actually collected over the five-month period (November 2017-March 2018). All usable deer carcasses were processed and donated to charity.

Deer Removal Permits (DRPs)

A total of 198 Deer Removal Permits (DRPs) were issued in 51 counties in 2017, compared to 161 permits in 48 counties the previous year. Three permits authorized hazing of deer only; 195 DRPs authorized the lethal removal of 1,539 deer. These permits resulted in the collection of 814 animals (53%). Excessive deer damage to corn and soybeans accounted for 62% of the DRPs issued during 2017. Approximately 21% of the 2017 DRPs were issued due to concerns about deer on airport runways/taxiways. Permits were also issued for deer-related damage to specialty/truck crops (sweet corn, peppers, tomatoes, cantaloupes, strawberries, peas, pumpkins, flowers, etc.), nursery stock, and fruit trees/orchards. As usual, DRP issuance peaked in June and July with 61% of the permits issued during these months.

Epizootic Hemorrhagic Disease (EHD)

Low to moderate levels of EHD were reported in 2017 with 169 suspected cases reported from 32 counties. The disease was reported at low levels in the southern third of the state as well as west central Illinois, extending up the Illinois River valley. A more intensive outbreak was reported in the west central Illinois county of Pike (80 cases). EHD reporting levels in 2017 were comparable to 2015 (206 suspected cases from 37 counties) and 2016 levels (194 suspected cases from 33 counties) as well as 2005, 2006, and 2008-2011 (averaging 104 deer annually). Significant outbreaks occurred in 2007 (1,966 dead deer from 54 counties), 2012 (2968 dead deer from 87 counties), and 2013 (1224 dead deer from 64 counties).

2018 Spring Turkey Harvest

Through May 2nd, Illinois turkey hunters had harvested a preliminary total of 10,153 wild turkeys during the 2018 spring turkey season, including the youth season. This date marks the end of the 3rd season segment in the North Zone and 4th season segment in the South Zone. This compares with 11,329 birds harvested at the same point in the 2017 season. The total harvest in 2017 was 15,719 and the state-record total harvest of 16,605 turkeys was set during the spring of 2006. Youth turkey hunters harvested a preliminary record total of 1,139 birds during the 2018 Illinois Youth Turkey Season. This was the second year two youth turkey hunting weekends were open for the entire state rather than one weekend dedicated for the North Zone and one for the South. Last year's youth season harvest total was a record setting 1,541 birds. The number of Illinois counties open to spring turkey hunting remained at 100 of the 102 counties statewide.

2017-18 Waterfowl Season

As a mid-latitude state, waterfowl abundance and hunter success in Illinois depends on habitat quality and food resources provided. Habitat conditions varied across the state in 2017, but were consistently more favorable for waterfowl habitat management than in 2016. Unpredictable growing season water levels continue to complicate waterfowl management in many of Illinois' most important wetlands. Despite mild weather throughout much of the fall, harvest appeared to be above average at many sites, and later than average freeze-up dates facilitated greater hunting opportunities in some locations. Duck abundance along the Illinois and Mississippi Rivers was greater in 2017 than 2016. Duck numbers peaked along the Illinois 13 November, but were 26% below the 5-year average. Duck numbers along the Mississippi peaked 14 December, 32% above the 5-year average, and the 10th highest peak since record keeping began in 1948. Duck abundance peaked 28 December in southern Illinois, over 200% above the 10-year average, and remained above average throughout January. Northeast Illinois duck abundance peaked 26 December slightly below the 10-year average. Despite extreme cold conditions, lack of snow cover in southern Wisconsin retained Canada geese north of Illinois. Goose abundance was below average in northern and central Illinois throughout December and January.

2016-17 Upland Harvest

The 2016-17 survey estimated that 10,204 hunters shot 14,831 wild pheasants in Illinois, compared to the 2015-16 totals of 13,955 hunters and 24,316 wild birds. The average number of pheasants per hunter/day decreased 7.27%. The 2016-17 quail survey estimated that 7,356 hunters shot 35,951 wild quail compared to 7,655 hunters and 29,089 quail in the 2015-16 survey. The number of quail per hunter/day was up 103%. Estimates from 2016-17 indicate that 34,527 hunters (down 1.9%) harvested 509,127 doves (down 31.6 %). The number of birds per hunter/day was

down 15.7% for mourning doves. The number of rabbit hunters in 2016-17 (22,425) was down 4.9% from the previous year and they harvested 90,411 rabbits (down 20.7%). Despite the decrease in participation, the number of rabbits per hunter/day increased 21.8%.

Agency Highlights

Hunter Heritage: Recruitment, Retention, and Reengagement

At the core of the Hunter Heritage Program approach to increasing participation in hunting is a feedback model proven to recruit, retain and reengage (R3) people in an outdoor recreation activity. Many states are using this model framework, but Illinois is taking it a step farther through the inclusion of science. For example, hunting licenses and permit records are being used to estimate R3 rates. These rates are then being used to build a population model of hunters, alike those used to guide conservation of numerous wildlife populations. Assessing hunter R3 through this objective approach provides greater understanding of what and how hunter programs are falling short in the R3 process, or even how likely a new hunting license would be at recruiting or retaining hunters. Through collaboration and data-sharing with partner hunting organizations and human dimensions researchers, the Hunter Heritage Program can greatly improve factual evidence needed to adapt and implement effective hunter programs across Illinois.

Preliminary results from the past 12 years of hunting license records indicate youth (<18 years) hunter retention and adult recruitment are the R3 rates suffering the most. These data also indicate females have better R3 rates than males across most age categories. Further, resident hunters are growing older on average, with participation in hunting plummeting after age 57. Lastly, hunters compose about 2% of Illinois residents, of which hunters are declining 2% annually.

The Hunter Heritage Program manager has meetings scheduled with partner hunting organizations and human dimensions researchers to begin development of a long-term contemporary hunter R3 strategy for Illinois. Also, contemporary updates to Hunter Fact Sheets, Hunting and Trapping Digest, and websites are being made.

Feral Swine

USDA Animal and Plant Health Inspection Service Wildlife Services (APHIS-WS) and IDNR have removed 460 feral swine in Illinois since 2009. The two known breeding populations of feral swine in Illinois have been eliminated with the removal of the last two boars (1 from each area) in 2015. Trapping (262 feral swine removed), shooting (146 feral swine removed, utilized for small groups and as a follow-up to trapping efforts), and aerial control (52 feral swine removed) are the methods utilized. APHIS-WS efforts are currently directed toward follow-up of citizen reports of feral swine; no additional populations have been confirmed. Legislation passed in 2014 allows the IDNR to regulate feral swine in Illinois; importation, possession, and commercial take of feral swine are prohibited. Feral swine hunting is limited to firearm deer seasons, and landowners are required to obtain a no-cost nuisance animal removal permit from the IDNR to remove feral swine from private property.

Bobcat Hunting

Illinois offered its second hunting and trapping season for bobcat since 1972. More than 4,500 people applied for 1000 permits to take a bobcat by hunting, trapping, or salvage from roads. Successful permit holders tagged a total of 358 bobcats. Hunters and trappers took 318 bobcats and an additional 40 road-killed bobcats were tagged by permit holders.

Illinois Recreational Access Program (IRAP)

Utilizing two grants from the USDA, the IDNR created the Illinois Recreational Access Program (IRAP) so that outdoor enthusiasts have more places to go. In 2017, IRAP leased over 17,500 acres of private land in 48 counties, creating opportunities for spring turkey, archery deer, squirrel, rabbit, quail, pheasant and waterfowl hunting. Several sites are also available for pond and river bank fishing as well as hiking. IRAP has written 70 habitat management plans, in cooperation with IDNR, USDA and SWCDs, on 10,500 acres of qualified leased private property. These plans are specifically written to provide a diverse habitat to improve Wildlife Action Plan targeted species. In 2017, IRAP completed more than 800 acres of nonnative invasive species control, 92 acres of timber stand improvement, 150 acres prairie prep/planting, and 3,636 acres of prescribed burning, and 28 miles of burn break.

Endangered Species

During 2017, the Department issued and/or renewed 413 permits for scientific research, personal possession, educational programs, and zoological/botanical institutions.

To better understand range and status of listed species, IDNR actively surveyed species such as: Illinois Chorus Frog, Kirtland's Snake, Mudpuppy, Eastern Hellbender, Smooth Softshell Turtle, Jefferson Salamander, Silvery Salamander, Timber Rattlesnake, Eastern Small-Footed Bat, Indiana Bat, Northern Long-Eared Bat, Eastern woodrat, Eryngium Stem Borer, and Hine's Emerald Dragonfly.

The Department continued to focus recovery efforts on the following species: Alligator Snapping Turtle, Blanding's Turtle, Eastern Massasauga Rattlesnake, Jefferson and Silvery Salamanders, Barn Owl, Osprey, Greater Prairie Chicken, Chuck-will's-widow, Clubshell Mussel, Northern Riffleshell Mussel, and Eryngium Stem Borer.

After over a decade of negotiations, the Department facilitated ownership transfer and permanent protection of the Magazine Mine in southern Illinois to The Underground Conservancy. The Magazine Mine is home to roughly 69,000 endangered Indiana bats, making it the 2nd largest hibernaculum for this bat in the United States.

Illinois Habitat Team

The Illinois Habitat Team Program provides technical assistance, seed, plants, equipment and labor for wildlife habitat establishment and improvement on state Pheasant Habitat Areas, Habitat Areas and private lands. In 2017, the team reported the following accomplishments: seeded 360 acres of native grasses and forbs, sprayed 567.5 acres for site preparation, weed and invasive plant control, mowed 144 acres for weed control, fire break maintenance and seed bed preparation, treated 227 acres for woody encroachment, conducted prescribed burns on 233.5 grassland acres and seeded 121 acres of cover crops.

Natural Areas Stewardship

The Illinois Natural Areas Stewardship Act went into effect August, 2017. This Act authorizes the Department to develop and administer the Illinois Natural Areas Stewardship Grant Program. The program will provide grants to eligible Conservation Land Trusts for stewardship activities on lands protected by the Illinois Nature Preserves Commission as Dedicated Illinois Nature Preserves and Registered Land and Water Reserves. This will be funded by a portion of the Illinois Real Estate Transfer Fee and will provide much needed stewardship actions on high quality natural areas throughout the state. The Department has gathered an internal team draft the rules, and is discussing roles and responsibilities of multiple Offices within the Department as preparations are made to initiate this program.

Incidental Take Authorizations

The IDNR has the authority to permit the take of listed species, if the taking is incidental to some otherwise legal action. Since 2001, the Department has 186 Incidental Take Authorizations either issued or pending. Examples of project types for which this permit is sought include transportation (river, road, and rail), utility corridors (power and pipeline), wind farms, mining, dam removals, and commercial development. The Department continues to strive to apply a consistent standard for mitigation of potential impacts to imperiled species as required by statute. The Department defines adequate mitigation as bringing conservation benefit to the species. Applicants are encouraged to provide support for on-the-ground efforts such as habitat acquisition and restoration; propagation, translocation, or species/habitat research to support recovery efforts; or outreach materials that provide land management and impact minimization recommendations for future applicants. Through this effort, the Department continues to experience an increase in partnerships between the agency and local land trusts, biological consultants, university researchers, and other conservation agencies to define timely and applicable mitigation strategies to support species.

Monarchs

In May 2017, the Directors of Illinois Dept. of Natural Resources, Dept. of Agriculture, Environmental Protection Agency, and Dept. of Transportation met and agreed to jointly work on monarch and pollinator initiatives. The meeting occurred during Monarch month, as declared by Governor Rauner. Additionally, Illinois has been collaborating with 15 other states and MAFWA on the development of the mid-America Monarch Conservation strategy. As part of this strategy, Illinois has identified a goal of 150,000,000 new stems of milkweed by 2038. Illinois Monarch Project, Illinois' multi-agency and organization monarch collaborative, is developing a Monarch Action Plan to identify state-specific strategies for meeting the 150,000,000 stem goal. The strategies will be developed with input from agriculture, natural lands, rights of way, urban, and education sectors. The Illinois Monarch Action Plan will be completed by March 2019.

Wildland Fire Programs

IDNR staff managed 9,500 acres in 117 units with prescribed fire during the last burn season. Seven introductory wildland firefighting classes were held for IDNR staff and volunteers. Eleven IDNR staff completed advanced wildland fire training classes at the Midwest Wildfire Training Academy. Fourteen G130 – 190 wildland fire classes were presented to the volunteer fire departments. A total of 65 fire departments were represented with 322 firefighters completing the

classes. Through federal excess equipment programs, IDNR acquired approximately \$8,000,000 of surplus fire equipment, including fire engines, trucks, rescue boats, lighting standards, generators, tools and a variety of other items. IDNR provided two 20-person Type 21A crew to assist in wildland firefighting efforts in Western States.

IDNR Nursery Program

For FY18, the IDNR Nursery Program produced 620,000 bare-root trees and shrubs in 12 different species. Additional nursery production included 2,000 containerized trees and shrubs in 17 different species; 12,000 containerized prairie forbs and grasses in 45 different species; 1,440 pounds of cleaned prairie forb seed in 45 different species, and 6,525 pounds of cleaned prairie grass seed in five different species. The Mason Nursery also assembled 250 packets of Monarch/Pollinator native seed mix.

Illinois Forestry Development Act (IFDA) Forest Management Program

IFDA requires landowners to have a current IDNR-approved forest management plan. These comprehensive plans define forest resources that are present, current condition, needs of the forested area for long term forest health, and recommendations. Illinois has approximately 543,625 enrolled acres engaging 9,513 forest landowners. As a result, approximately 15% of non-industrial private forest land in Illinois is being managed for long term forest health. Recommended forest improvement practices include afforestation, reforestation and forest stand improvement.

Illinois Forest Legacy Program

The Forest Legacy Program is a partnership between the IDNR and the USDA Forest Service to identify and acquire environmentally important forests. Conservation easements are the main tool used for protecting these important forests. The IDNR Division of Forestry maintains eligibility to complete up to three projects per year. Illinois has seven Forest Legacy Properties within its borders totaling 558 acres.

Urban and Community Forestry Program (UCF)

The UCF program administers the Tree City USA, Tree Campus, Tree Line and Growth programs. Communities received education and recognition for their local forest management programs. Illinois has been ranked first for the number of Tree Campuses in the nation since program began. Illinois has 182 Tree Cities, 18 Tree Campuses, 27 Growth Award winners.

Illinois Forest Utilization & Marketing Program

IDNR bonded and licensed 410 individual timber buyers or companies listing 787 total authorized agents to purchase timber from any Illinois forestland owner. Seventy-five sawmills and additional hobby or portable mills are currently operating in the state. Verified sales of timber and products, primarily as hardwood logs, from private forests exceeded \$38 million. The total economic value of the forest products industries to Illinois, including all primary and secondary sectors, exceeded \$23 billion as measured in 2012. The agency, through its forestry division Utilization and Marketing Program with support from the Illinois Forestry Development Council is engaged in a 2017_2018 effort, under a multi-state competitive USDA Forest Service grant to closely analyze Illinois and most northeastern US states full timber output and economic forest/forestry values.

Illinois Conservation Reserve Enhancement Program (CREP)

The Illinois Conservation Reserve Enhancement Program (CREP) is a State Incentive Program combined with the USDA Federal Conservation Reserve Program (CRP). CREP provides long term environmental benefits by allowing 232,000 acres of eligible environmentally sensitive lands within the Illinois River and Kaskaskia River watersheds to be restored, enhanced and protected over a period of time from 15 years to perpetuity. Since CREP was established in 1999, 1,408 easements have been placed, protecting 90,990 acres. However, CREP was temporarily suspended effective July 1, 2015 and has not accepted any new easement enrollments to date.

Nutrient Loss Reduction Strategy

IDNR staff are involved with planning and implementation efforts for The Illinois Nutrient Loss Reduction Strategy (NLRS). The 2008 Gulf Hypoxia Action Plan, calls for each of the 12 states in the Mississippi River Basin to produce a plan to reduce the amount of phosphorus and nitrogen carried in rivers throughout the states and to the Gulf of Mexico. In 2011, U.S. EPA provided a recommended framework for state plans. Illinois' plan was developed by a policy working group that includes representatives from state and federal agencies, including IDNR, agriculture, and non-profit organizations as well as scientists and wastewater treatment professionals. IDNR staff are actively involved in the Nutrient Monitoring Council that is charged with coordinating water quality monitoring efforts by government agencies, universities, non-profits, and industry; the Agriculture Water Quality Partnership Forum that steers outreach and education efforts to help farmers address nutrient loss; and the Urban Stormwater Working Group that coordinates and improves stormwater programs and education.

Illinois Wildlife Action Plan

In December of 2017 Leon C. Hinz Jr. was hired into the Division of Natural Heritage as the Wildlife Action Plan Coordinator. Dr. Hinz was previously employed with the Illinois Natural History Survey as a Stream Ecologist since 2005. There are currently 25 active projects funded through the State Wildlife Grant program that support work enhancing and restoring Natural Areas and Threatened & Endangered species throughout the State of Illinois.

Indiana

INDIANA STATE REPORT

May 25, 2018

Mark Reiter, Director
Indiana Division of Fish & Wildlife
402 W. Washington Street, W273
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Transformation

In January 2017, Division leadership made the decision to work toward implementing Good Governance Principles to better adapt to managing fish and wildlife resources in a rapidly changing society. It was identified very early on that in order to be successful, a strong leadership team needed to be developed. Over seven months, management staff participated in a series of Leadership and Culture Development training to assist them in developing the skills and relationships necessary to lead the Division through the transformation process. As a result, the team has been able to set a new vision and is beginning the planning process to implement the vision.

Recruitment, Retention, and Reactivation of Hunters and Anglers (R3)

In 2017, the R3 team created its first comprehensive statewide R3 Plan. The plan will guide the Division's R3 efforts over the next 5 years and covers hunting, angling, trapping, and shooting sports. The plan focuses on increasing the number of certified hunters and anglers and increasing participation, support, and acceptance of hunting, angling, trapping, and shooting sports. The team also created guidelines to help Division staff when conducting R3 events. 104 public angling events with a total of 10,100 participants and 64 hunting, trapping and shooting events with a total of 1,650 participants were conducted. A three year contract position in partnership with National Wild Turkey Federation was finalized to add another R3 position.

Lapsed Angler Marketing Campaign

We conducted three email blasts to boost license sales of lapsed anglers and 2016 new recruits. Emails reminding customers their 2016 license was no longer valid and encouraging them to purchase a 2017 license were sent on April 1, April 13, and May 16. The last two emails were associated with Free Fishing Days. This email campaign resulted in the sale of 3,747 licenses. When adjusted for the different license types, a revenue increase of approximately \$284,000 was estimated. A 4th email blast was sent in the fall to encourage lapsed anglers to purchase a 2017 license and highlight quality fall fishing opportunities.

State Wildlife Action Plan (SWAP)

Indiana's State Wildlife Action Plan (SWAP) was used in the development of the Indiana Stream and Wetland Mitigation Program (INSWMP), the state's in lieu fee program. The program used SWAP's Conservation Opportunity Areas (COA) to identify target areas that will greatly improve the efficacy of compensatory wetland mitigation projects by providing a greater focus for creating, restoring and enhancing wetland habitats. Previous mitigation efforts were largely an assortment of small, isolated projects within a larger landscape.

A task force from across all Division units was formed to specifically address the threats associated with the continued loss of Indiana's cold water lakes. The task force will work to address all aspects of the social and biological threats to our cold water lake catchments, which are also identified Conservation Opportunity Areas in the SWAP. It is hoped that this project can serve as a model for larger scale implementation and coordination within the Division.

IN Monarch Conservation Summit

The Indiana Monarch Conservation Summit was held September 19-20, 2017 and was hosted by the Indiana Wildlife Federation. The summit was funded by a grant from the National Wildlife Federation and donations from state conservation partners. Approximately 60 individuals attended from over 40 different state and federal agencies, municipal groups, NGO's, utility companies, and agriculture groups. These attendees laid the foundation for an IN Monarch Conservation Plan, identifying key sector groups and priorities and challenges to a state plan. One action item established from the summit was the need to fund and contract a plan writer. A team worked to fundraise \$12,000 to hire a contractor to assist in the coordination and drafting of the Indiana Monarch Conservation Strategy.

State Fish Modernization & Reinvestment

The Division operates 7 state fish hatcheries throughout the state. Approximately 17 types of fish species involving over 20 million fish are stocked each year. The current generation of hatcheries dates back approximately 40 years. A comprehensive study of all hatcheries and five support facilities was conducted to provide recommendations for the next generation of hatcheries. The study recommended a long term, dedicated capital funding over multiple budget cycles to fully address the needs for the next generation of hatcheries. A business case analysis was also completed with this study. Results indicated that Indiana anglers spend approximately \$100,000,000 each year fishing for DNR hatchery stocked fish. This economic activity generated approximately \$10,000,000 annually in tax and license revenue to the state. The final report provides recommendations for a series of budget funding packages to complete the implementation of the preferred infrastructure alternative. The next steps for the Division will be to identify and allocate funding for the preferred actions for infrastructure reinvestment.

Land Acquisition

The division continues to pursue opportunities to acquire more land. In 2017, the division acquired 85 acres of Gamebird Areas, 170 acres were added onto Fish & Wildlife Areas and 9.6 acres were donated for Public Access sites. Through the Healthy Rivers Initiative (HRI), the state's largest land conservation initiative, an additional 293 new acres were purchased. In total, 557 new acres were acquired by the Division.

Lead Reclamation

Public Lands staff completed a comprehensive evaluation of all the shooting ranges on Fish and Wildlife Areas a few years ago. One challenge identified in the evaluation was dealing with the lead that had accumulated in the back stops over the years. Lead management is critical for both environmental and safety reasons on shooting ranges. The division began the process of lead reclamation on 9 ranges over a two year period. Reclamation was confined to the backstops rather than the trap and skeet fields. Upon completion of the reclamation efforts, 203,995 lbs of lead was reclaimed by a contractor. The division will continue to monitor the ranges and reclaim lead as needed.

Grasslands for Gamebirds & Songbirds (GGS)

Grasslands for Gamebirds & Songbirds is a partnership program designed to develop grassland & pollinator habitat within 5 focal regions of Indiana. The objective is to develop grassland and pollinator habitat that benefits grassland birds including focal species such as Northern Bobwhite Quail, Loggerhead Shrikes, Ring-Necked Pheasants, and Henslow's Sparrows. Secondary objectives include the benefits to soil health, water quality, & other wildlife species. This program is funded through the NRCS Regional Conservation Partnership Program (RCPP) (\$1 Million), by 32 partner organizations (\$833,000) and by donations from companies, not for profits, and private individuals (\$200,000+). The total budget for this program is slightly over \$2 Million dollars. The GGS program provides technical assistance, financial cost share assistance, and incentive payments to landowners for the development of quality grassland & pollinator habitat on their property. GGS funding will allow for the hiring of 3 full time "Grassland Biologists" to help implement the program. Total acreages targeted for development in the first 3 years of the programs' existence include 2,250 acres of grassland/pollinator habitat using EQIP (RCPP) funds, another 1,000 acres of grassland and early successional habitat using partner financial assistance funds, and approximately 1,500 acres of quality Northern Bobwhite Quail habitat as part of National Bobwhite Conservation Initiative (NBCI) focal area protocols. An NBCI focal area in southwestern Indiana will serve as the brunt of the monitoring efforts for the RCPP funding while also allowing DFW to implement an NBCI focal area on Indiana's landscape. The GGS development committee is also working to develop "habitat teams" that will help implement habitat installments for identified projects (an added incentive to maximize participation). The GGS initiative is a landscape conservation approach that is leveraging partners and financial resources to synergize conservation efforts in Indiana. While completely funded, this initiative is still developing and is scheduled to launch with the

first round of producer sign ups in the fall of 2018. Robust interest from landowners wanting to participate in the initiative has been experienced to date.

Access Program Providing Land Enhancements (APPLE)

APPLE, an acronym for Access Program Providing Land Enhancements, is the Division's first private lands hunter access program. APPLE is a subsidiary program of our Grasslands for Gamebirds & Songbirds (GGS) efforts. This program provides financial incentive payments to private landowners who allow controlled public access hunting for gamebirds on their private lands. Funding for this program is available through the sale of Gamebird Habitat Stamps in Indiana. Private Lands Biologists work with landowners to establish and/or improve habitat on the tracts enrolled. Interested hunters can then apply via reserved draw for hunting opportunities of Northern Bobwhite Quail, Ring-Necked Pheasants, or American Woodcock. The landowner reserves the hunting privileges for all species on the APPLE property, except for the scheduled dates when the property is being accessed for the APPLE controlled hunts. In 2017, DFW launched this pilot program on 2 tracts totaling 245.4 acres of available habitat. In all, 15 hunting opportunities were provided through this program in its pilot season. APPLE will expand the acreages enrolled and the hunting opportunities in the fall of 2018. The eventual goal of this program is to grow beyond hunting access for gamebirds into a program providing access for deer, turkey, waterfowl, gamebird, and other small game hunting as well as fishing, birding, and wildlife viewing opportunities. The monies used to fund the APPLE program are used as "in kind contribution" (a form of match) for our Regional Conservation Partnership Program that funds the GGS initiative.

Community Hunter Access Program (CHAP)

CHAP, or Community Hunter Access Program, is a program designed to increase hunting opportunities for White-Tailed Deer and help alleviate human/deer conflicts. The program will provide community partners with financial and technical assistance to administer hunting programs in their communities. The community partners will work with a Division certified CHAP Hunt Coordinator to administer the hunt. Each partner will work with a CHAP Hunt Coordinator to determine the location and time of the hunts along with the number of hunters and hunter eligibility. All CHAP hunts take place during the regular deer hunting seasons within Indiana. Partnering communities, homeowners associations, parks and other organizations must submit an application for funding. CHAP agreements are available for up to \$25,000 per hunting season per community to incentivize hunting access. Funding for the CHAP program is available as a federal grant with the U.S. Fish and Wildlife Service with the state apportionment funded through the Indiana Fish & Wildlife Fund. Staff will be launching the pilot year for the CHAP community hunts in the fall of 2018. For the 2018 hunting seasons, there were 5 successful applicant communities that applied for funding. These 5 communities should provide 2,165 acres to be accessed for deer hunting in the fall of 2018.

Hellbender

2017 was a significant year for Indiana's hellbender conservation efforts as researchers at Purdue University reintroduced 80 captive-reared hellbenders into the Blue River, where they were originally collected as eggs. The four year old hellbenders were fitted with radio transmitters that allowed researchers to track their post-release movements. This first release was the product of over a decade of research by Purdue University and the Indiana Department of

Natural Resources, and was enhanced by collaborative partnerships with local zoos and conservation groups like The Nature Conservancy. Purdue researchers have also been examining other Indiana streams to assess their suitability for hosting additional hellbender populations. While most streams examined did not contain suitable habitat, one stream was found to contain habitat features similar to that of the Blue River. Over the next four years, an additional 400 hellbenders are scheduled for release in Indiana rivers, including an upcoming release in the Blue River scheduled for the summer of 2018.

Fawn River Dam

The Fawn River Dam, located in northeastern Indiana, created an impoundment that was used as the water supply for the Fawn River State Fish Hatchery. In 2015, Indiana Division of Fish and Wildlife moved forward with an infrastructure improvement to convert the hatchery from a surface water supply to a closed (well) water supply facility. This change from surface to groundwater eliminated the dependency of the fish hatchery on the impoundment to perform hatchery operations, thus eliminating the need for the Fawn River Dam. In 2016, it was decided to remove the dam in order to eliminate a migration barrier for fish and mussel species on the Fawn River to restore natural stream conditions. A combination of USFWS Fish Passage Program and state of Indiana monies were used to fund the removal of the dam. The work to remove the dam started in the fall of 2017 and is currently being wrapped up.

Coho Salmon

Sometimes less is more when it comes to delivering fishing opportunities to anglers, and the 2017 coho run on the St. Joseph River serves as a perfect example. In 2016, DFW biologists and hatchery staff teamed up to tweak coho stocking strategies, trading a larger number of fall stocked fingerlings for a reduced stocking of larger, spring yearlings. The final outcome of the shift was realized as coho began to return as adults last September, and the change was dramatic. Estimates of coho passage through the South Bend Fish Ladder ballooned in 2017 to more than 6,200 fish from September to November. This was more than 4 times highest value in recent years and 6 times greater than the 10-year average.

Large Mouth Bass

The Division has been working on aquatic habitat projects with a project on Raccoon Lake (Cecil M. Harden Reservoir). The Division has partnered with Bass Unlimited and the Indiana Bass Federation with these aquatic habitat projects. As a follow up to the Raccoon Lake project, experimental Largemouth Bass stocking of large fish (8-10 inches) in the spring was funded by the Indiana Bass Federation. Evaluations of the stockings will determine if they are making a positive impact on the fishery.

Deer Management

A total of 113,595 harvested deer were reported in Indiana during the 2017 season, which was 5% lower than the 119,477 deer taken during the 2016 season. A review of the statewide deer management plan was conducted and after a 5-year of goal of working to decrease the deer

herd through high doe harvest, it is believed we have achieved both a lower deer density and a more balanced sex ratio (near 1:1). The Division increased our capacity to collect both biological data on deer and sociological data on hunters through the use of electronic surveys. In the southeastern portion of the state where TB has been found in livestock, 531 deer were tested for bovine TB, all of which have been negative. With CWD being only 25 miles from the Indiana border in the northwest portion of the state, the Division has increased sampling in that area and are making plans to further increase the surveillance intensity in 2018.

Spanish Hunting & Trapping Guide

The Division released its first ever Spanish version of the Hunting and Trapping guide. This 6-page document made available online and for download explains all the hunting and trapping season dates, bag limits, equipment restrictions, safety information, and regulations in Spanish. The goal was to break down language barriers that were preventing the Spanish speaking community from participating in hunting and trapping traditions. This effort will allow everyone to better understand hunting and trapping rules and regulations as well as encourage new users throughout the state.

Iowa

**IOWA
STATE REPORT
January 2017-December 2017**

Dr. Dale L. Garner, Division Administrator
Iowa Department of Natural Resources
Conservation and Recreation Division
502 East 9th Street, Wallace Building – 4th Floor
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Iowa DNR Mission Statement: To conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life for Iowans and ensure a legacy for future generations.

Iowa DNR Vision Statement: Leading Iowans in caring for their natural resources.

The Department of Natural Resources – Conservation and Recreation Division

The Iowa Department of Natural Resources (DNR) is led by Acting Director Bruce Trautman. Director Chuck Gipp retired 05/01/18. The current Divisions within the DNR are Environmental Services Division (regulatory) and the Conservation and Recreation Division.

The Conservation and Recreation Division (CRD) is charged with the management of Iowa's fish, wildlife, and natural resource management under Fisheries, Forestry, Land and Waters, Law Enforcement, State Parks, and Wildlife. In February 2017, Dr. Dale L. Garner was appointed to serve as Division Administrator.

Natural Resources and Outdoor Recreation Trust Fund (formerly known as Sustainable Natural Resource Funding): In 2006, the legislatively appointed Sustainable Funding Advisory Committee, chaired by the DNR, began their in-depth four year internal and multi-state research in preparation for their comprehensive reports to the Governor and General Assembly. In 2008 and 2009, proposed legislation was overwhelmingly passed to allow the people of Iowa to vote on a Constitutional amendment that would create a dedicated trust fund. In November 2010, the people of Iowa voted to amend Iowa's Constitution to create the Natural Resources and Outdoor Recreation Trust Fund and authorize a dedicated funding source of 3/8 of 1% of sales tax the next time the tax is legislatively raised. Iowa Code Chapter 461 provides the framework for the distribution, use, and accountability of this Trust Fund. Since the Trust Fund's enactment on January 1, 2011, legislators continue to discuss sales tax options to finance this Trust Fund. To date, the Natural Resources and Outdoor Recreation Trust Fund has not acquired any receipts. The DNR submits mandated reports to the General Assembly annually. These reports and more information can be found at: www.iowadnr.gov/About-DNR/Grants-Other-Funding/Natural-Resources-Rec-Trust

Support for the DNR's Fish and Wildlife Trust Fund (FWTF): The FWTF is a special account first established in Iowa in 1937 to manage and regulate Iowa's wildlife and fishery resources. In 1996, an amendment to the Iowa Constitution was passed to protect the Trust Fund

from being diverted for other purposes during difficult state economic times. This amendment stipulates that fee-generated revenue and associated federal funds can only be used for the purposes of promoting, managing, researching, and regulating hunting, fishing, and trapping in Iowa. The adjustment to fees was only through legislative action, which reduced flexibility in the DNR's management of funds. With the support of many stakeholder groups and license buyers over the years, this year, the legislature passed a bill that would shift the authority of setting license fees to the DNR. On 05/17/18, Governor Reynolds signed the Fish and Wildlife Trust Fund bill (House File 631) into law. The DNR will now work through the rulemaking process to adjust hunting, fishing, and trapping license fees, of which many have not be increased since 2003.

Fisheries Bureau

Rathbun Section 1135 and PAS Study: The DNR received funding for the new Section 1135 and Public Assistance to States (PAS) projects at Rathbun Lake. The 1135 funds will provide for the installation of additional shoreline protection for water quality improvement, as well as an electric barrier to reduce fish emigration. The PAS study is a new project with Iowa State University to track walleye abundance, movements, and emigration rates as part of the pre-barrier evaluation.

I-74 Project Team Award: Planning for replacement of the Interstate 74 Bridge over the Mississippi River in the Quad Cities has been on-going since 2016. The I-74 Project Team (consisting of the Iowa DNR and DOT, Illinois DNR and DOT, US Fish and Wildlife Service, and Federal DOT) was selected as the recipient of a Federal Highway Administration (FHWA) 2017 Environmental Excellence Award. This award recognizes the exemplary achievements of the I-74 Project Team in Environmental Research. The award was given for the handling of sensitive mussel issues, especially with the three federally listed species (Spectacle case, Sheepnose, and Higgins Eye) and numerous state listed mussel species, including the Iowa threatened Butterfly mussel. A total of 139,133 mussels of 32 species were collected on the Illinois bank, and an additional 1,561 mussels of 20 species were relocated from Iowa. All mussels were relocated to previously selected sites upstream of the bridge corridor. These biennial awards honor outstanding initiatives and partnerships across the United States that incorporate environmental stewardship into the planning and project development processes using FHWA funding sources.

Angler Use Before And After a Dam Modification Project: Interest in modifying and removing aging, low head dams on Iowa's interior rivers has increased over the past several years. This interest is driven by safety and liability concerns, deterioration of existing dams, and a desire to increase river recreation opportunities. Areas below dams are often popular fishing locations. A common concern is that dam removal or modification projects will negatively impact angling, particularly below the dam. A recent whitewater park and habitat improvement project on the Maquoketa River in northeast Iowa near Manchester provided an opportunity to quantify the impacts of a dam removal project on angler use, catch, and harvest. The project, completed in spring 2015, involved removing the dam and building six structures to create whitewater features while also allowing fish to pass upstream. A roving angler survey was conducted from April-October for three years before and three years after project construction. There was a significant post-project increase in other recreational uses (boating, tubing, and swimming) during June-August, particularly in the whitewater project area where mean

recreational use increased from 426 hours pre-project to 8,657 hours post-project. Angler satisfaction also increased post-project, and the project attracted more anglers <16 years old and new anglers to the fishery. By quantifying the impacts of this project on anglers, this study provides information that will help managers address angler concerns and increase fisheries benefits of future projects.

Iowa DNR Aquatic Vegetation Management Guide: Some of Iowa's public lakes have experienced problems with excessive aquatic vegetation due to changes in in-lake and watershed management strategies, excessive nutrients, and proliferation of nuisance and invasive species. In response to increasing vegetation management concerns voiced by managers and citizens around the state the Iowa DNR Fisheries Bureau developed an aquatic vegetation management guidelines manual in 2017 for planning, funding and executing control of excessive vegetation in Iowa's public lakes. This guidebook provides managers with flow charts outlining treatment options along with funding sources depending on the type of lake that is being treated, vegetation type, vegetation coverage, funding sources and overall lake management objectives. Lake managers are required to submit annual aquatic vegetation management plans, which adhere to these guidelines, for each public owned lake that they plan to remove or chemically treat aquatic plants.

Advances in Inducing Walleye Spawning in Hatchery Operations: The Iowa DNR produces over 150 million Walleye fry each year. The use of Chorulon, an FDA-approved fish spawning stimulant, has substantially increased the efficiency with which the DNR meets its Walleye egg quota each spring. Promising results were shown in experimental trials and in 2017, Rathbun Fish Hatchery in south central Iowa used Chorulon on a production scale and achieved excellent results.

The 2010 – 2016 dataset for Rathbun Lake Walleye broodstock collection showed that 32.8% of collected fish were ripe the night they were collected and 67.2% were "green." Of the 62.7%, only 19.7% would ripen in the hatchery. Green females were evaluated daily for ripeness for seven days. If ovulation was not achieved in this period of time, broodstock were returned to the lake from which they were collected. This seven-year data set showed that nearly half (45.7%) of fish were returned to the lake unspawned. In 2017, only 15.4% of the collected fish were ripe the night they were collected in gill nets. Another 4.2% of fish became ripe and were spawned the following morning. The remaining 80.4% were injected with Chorulon. The injection rate was 500 IUs per kilogram of body weight. Each fish was given two intramuscular injections that were administered 48 hours apart. Ninety-six percent of the Chorulon-injected Walleyes became ripe and were manually spawned. Peak ovulation occurred five to six days following their initial injection of Chorulon. These results were so impressive we intend to expand the use of Chorulon at other Iowa fish hatcheries during the 2018 Walleye spawning season.

Forestry Section: In 2017, the DNR restructured the forestry bureau to integrate the majority of field staff into the Wildlife and State Parks Bureaus in an effort to coordinate resource management efforts and address funding issues.

Forest Health: Foresters continued to monitor for serious insect, disease, invasive plant species, and environmental problems in Iowa's woodlands. Aerial surveys of 1,292,739 acres was mapped to determine forest health problems and potential management plans. There were

417,862 aerial acres mapped out of dead and dying trees from emerald ash borer alone. Ground confirmations were conducted to resolve any issues identified in the aerial survey. District foresters worked with impacted landowners on appropriate salvage and reforestation efforts in areas with oak wilt, Dutch elm disease, oak tatters, aspen decline, bur oak blight storm, and flood damage. In cooperation with the Iowa Department of Agriculture and Land Stewardship (IDALS) State Entomologist and the USDA, the Forestry Bureau assisted in contracting, placing, and monitoring 4,376 gypsy moth traps that captured 200 male gypsy moths. A natural established gypsy moth population was detected through the survey in Jackson County just west of Bellevue, IA. IDNR will be working with IDALS to eradicate this gypsy population to prevent further damage from this pest and the establishment of quarantines. EAB larvae or adults have now been identified in 57 of 99 counties. A total of 568 walnut twig beetle monitoring traps were placed around the state. No walnut twig beetles were captured. However, 3,954 ambrosia beetles, Pityophthorus beetles, and weevils that were collected and submitted as part of the national survey. A total of 4,673 maples in 28 communities were examined for the presence of Asian longhorned beetle. None of the trees were positive for Asian longhorned beetle. Several invasive plant workshops were hosted with the demand being on Oriental bittersweet control. Seventy-one pest workshops were held to cover the pests detailed above.

Urban Forestry: The Urban and Community Forestry Program continues to provide technical, educational and financial assistance to communities, individuals and organizations. Last year the program provided support to 439 communities. One of the main components of assistance continues to be tree inventories, forestry management plans and emerald ash borer (EAB) preparation for communities under 5,000 in population. Annually 6,000 reduced-price trees are planted on private property with a partnership and financial support from Alliant Energy and MidAmerican Energy. The programs promote energy efficiency, urban forest tree diversity and preparation for future tree health problems. A recent statewide canopy cover assessment provides data on where and how much tree cover we have in Iowa. Iowa communities have 18.5 percent tree cover, about 253,056 acres of community forest. Urban Forests continue to be threatened by canopy loss. The economic loss caused by the top five key pests (Gypsy moth, bur oak blight, EAB, Asian long-horned beetle and thousand cankers disease) is an estimated \$1.4 billion over 20 years for forest landowners and wood products businesses and over \$20 billion in urban tree removal. Additionally, Forest Service studies show 4.5 million trees were lost due to development in Iowa from 2010 to 2015.

Land and Waters Bureau:

Public Land Acquisition and Management Program: The bureau provides assistance to operating bureaus to acquire lands and to address land management issues, such as unauthorized land-uses and boundary issues. It also assists the program bureaus with agreements such as habitat leases, county or city management agreements, office leases and building disposal agreements. In 2017, public land and conservation easement acquisitions totaling 5,608 acres, protecting natural resources and providing Iowans with new and enhanced outdoor recreational opportunities; 4,274 of these acres directly impact water quality and watershed improvement efforts.

Rivers Program: This program contains multiple program areas over four major areas, including: water trail outreach, mapping, planning, designing, constructing and signing; low-

head dam mitigation to remove or reduce hazards to public safety and/or fish passage; moving water education instruction and training; and comprehensive conservation efforts, in partnership with local groups and stakeholders, in identified protected water areas. A total of 916 miles of dedicated water trails have been developed with 807 additional miles under study.

Environmental Review & Sovereign Lands Program: The Environmental Review and Sovereign Lands Construction Permit staff apply information about endangered species, state preserves, natural communities, and other significant natural resources for the review of potential environmental impact of proposed construction and development projects requiring a permit from the Department. The Threatened & Endangered Species staff coordinates the conservation of 13 federally listed species of plants and animals and over 300 state-listed species. Staff develop and maintain a database of locations of listed species and special natural communities such as prairie and fen wetlands and oversee research activities including federally funded projects. The State Preserves staff work with the State Preserves Advisory Board to develop and maintain a statewide network of 96 preserves on lands with significant biological, geological, archaeological, historical, or scenic value.

Engineering and Construction Services: This program oversees the Department's capital improvement projects. From the smallest outhouse to the largest spillway construction project in Iowa, professional staff provide and put into practice the most advanced technology to ensure safe and cost effective solutions to architectural and engineering projects. Services provided include: planning and development, engineering surveys, professional engineering and architectural design services, contract administration, project management and construction inspection, federal emergency management, emergency response projects, consultant selection and contract negotiations, and investigative reporting. In 2017, 123 engineering, construction, and public capital improvement projects totaling \$15,169,507.72 on public lands were contracted; \$2,737,311.82 of these projects were associated with lake restoration, watershed, and water quality improvement projects.

Lake Restoration Program: Many of our Iowa Lakes, similar to our nation's lakes, are impaired and suffer from excessive algae growth and sedimentation due to nutrient loading and soil loss. The Lake Restoration Program's focus is on restoring Iowa's significant publicly-owned lakes and publicly-owned shallow lakes/wetlands. Iowa has completed restoration work at 22 lakes, with 21 projects underway, and 15 projects in the initial planning stages.

Law Enforcement Bureau: Currently the Iowa DNR Law Enforcement Bureau employs 81 full-time, sworn peace officers. As of now, there are nine vacant officer positions. The Department hired a new District 2 supervisor that will begin his duties on May 4th. The Department was given a status quo budget again this year, so officers are stretched thin and have to prioritize calls for service.

This past November saw Iowa have its first ever officer involved shooting that resulted in a fatality. Conservation Officers in Iowa have been fortunate in the fact that there have been very few instances where an officer had to fire his/her weapon at a suspect. In this case, a rural police department asked for assistance in looking for an armed, wanted individual. Iowa Conservation Officers are fully certified peace officers and as such, they can enforce any state law. The officer

involved called in to his supervisor for permission to join in the search. Conservation Officers often rely upon help from other law enforcement agencies, so our officers try to be there to assist these other departments when they ask for help.

Iowa still maintains its status as a destination state for those that like to hunt trophy deer, and officers spend many hours in the fall on deer enforcement. This past fall, Conservation Officers were in the woods on a different type of case: murder. A man that had been hunting in a wildlife area failed to show up when expected and police officers began looking for him. Conservation officers were called in to assist. The man was located and the physical evidence indicated foul play. Conservation officers and their knowledge of the outdoors were vital in the search for the missing man, and helping locate the suspected perpetrator of the crime.

Unfortunately, there are those that are always willing to break fish and game laws. Iowa Conservation Officers are passionate about protecting the resource and spend a great amount of time catching those willing to cheat. Officers are also passionate about teaching about the resource and introducing new members to the great outdoors. Officers mentor new hunters, both young and old, teach fishing clinics, work outdoor events like the State Trap Shoot and NASP archery programs, talk to civic groups, and teach trapping techniques. In short, Conservation Officers are much more than enforcement.

State Parks Bureau: Iowa's state park system is comprised of 91 parks and recreation areas. DNR manages 68 parks and recreation areas, and 3 state forests' campgrounds with the remaining 20 parks and recreation areas managed by local entities through management agreements. In 2017, Iowa's state forest system was incorporated into the bureau. Collectively bureau staff is responsible for managing over 102,000 acres of parks and forests. Under process improvement, in 2017, a team of administrative staff, field staff, and supervisors evaluated the policies and procedures used to recruit concession operations and administer concession contracts. As a result, roles and responsibilities significantly changed by transferring more control and decision making to the field. A concession program manual was created to provide guidance to all staff and included planning tools and templates.

Recreation: Millions of people continue to enjoy Iowa's natural resources and recreational opportunities in state parks. In 2017, camping guest days totaled 870,916, up 4% from the previous year. There were 48,445 camping reservations made through the centralized reservation system, up 13% from the previous year. As camping continues to grow, the bureau has begun to add more campsites to the centralized reservation system with the goal of having 75% of total campsites reservable in 2018 to meet the growing demand for camping.

Resource Management: The bureau continues to make progress on natural resource plans for parks. One priority is the creation of forest management plans for the parks. In 2017 work continued on the plans for four state parks, three new plans were started, and one plan was completed. State forest staff completed 731 acres of forest stand improvement, 76 acres of reforestation, 249 miles of trail maintenance, 2,965 acres of prescribed fire, 126 acres of prairie and savanna management, collected 105 bushels of seed, and conducted 12 educational programs in 2017. They also sold 549,000 board feet of timber valued at \$307,875.

The Wildlife Bureau operates and maintains 477 public fish and wildlife areas spanning 387,702 acres. About one-third of these acres are federal lands managed by the wildlife bureau under agreements with U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. Federal lands include more than 22,000 acres of Waterfowl Production Areas in the Prairie Pothole Region of Iowa. All of these public lands are managed to provide quality wildlife habitats and hunting, fishing, and other consumptive and non-consumptive fish and wildlife related recreational opportunities. Managed wildlife habitats include nearly 100,000 acres of wetlands, 140,000 acres of grasslands, and 115,000 acres of forest/woodland. Annual management activities include burning 30,000 acres of prairie, and managing wetland habitats through water level manipulation utilizing 881 water control structures, 246 miles of dams, dikes, and levees and 33 pumping stations.

The private lands access program in 2011 under a Voluntary Public Access grant from U.S. Dept. of Agriculture. This program has continued to grow, and last year included 148 sites and 20,785 acres of managed wildlife habitats on private lands open to public hunting. A majority of these acres include wildlife habitats established under the first year of enrollment in the program, and hunting use and satisfaction continues to trend upward as these new habitats become better established. In 2017, more than 27,600 people hunted on an IHAP site, and the percentage of hunters who indicated they would recommend hunting on IHAP tracts to friends or relatives increased by 13% over the previous year. The program has also been popular with landowners with 93% indicating that they were satisfied with the services received from DNR staff and 92% indicating that they would recommend enrollment to a friend and would likely re-enroll in the program themselves when their contract expires if given the opportunity.

The Private Lands Program assists landowners in implementing forestry and wildlife habitat improvements on their property. This year, the efforts are being expanded in association with the Young Forest Initiative and partnering with the Wildlife Management Institute (WMI) and the Natural Resources Conservation Service to promote healthy forest management in Northeast Iowa. Through this partnership, WMI will be hiring 4 new Forestry Specialists to help private landowners improve their woodlands for wildlife, recreation, wood products, and soil and water quality. Under professionally developed forest management plans, young forest will be created on a combination of public and private lands through timber harvesting, prescribed fire, and other forest conservation and management practices that will benefit many species of wildlife experiencing population declines, including ruffed grouse, wild turkeys, and many species of songbirds.

In 2017-2018, staff collected medial retropharyngeal lymph nodes from 6,369 wild animals. The greatest collection effort (42% of collected samples) continues to be along the 6 counties in Northeast Iowa that are closest to the Wisconsin and Illinois CWD endemic areas and Minnesota's southeast containment area. CWD was first confirmed in a sample collected from an adult wild male white-tailed deer harvested during the fall 2013 firearms season in Allamakee County in northeast Iowa. Increased surveillance in this area since has found 24 additional animals including 8 positives in 2017. In 2016, a positive wild deer was found in Clayton County in northeast Iowa and testing this past year yielded another positive animal. In 2017, a positive wild deer was also discovered in Wayne County in south-central Iowa near the Missouri border.

Kansas

KANSAS 2017-2018 MAFWA REPORT

iWIHA

The Kansas Department of Wildlife, Parks and Tourism's (KDWPT) Walk-in Hunting Access (WIHA) program leases more than 1 million acres of private land each fall and opens it to public hunting, more than tripling the amount of public hunting land in the state. Throughout the years, other programs such as the Spring Turkey WIHA, and Special Hunts on Private Lands have been added to address other hunting access issues, especially the lack of access in urban counties. The Special Hunts program has offered a limited number of opportunities near urban areas but has remained stagnant for several years.

In an effort to re-address the urban access issue, KDWPT has begun a pilot program called iWIHA. This program takes the limited-use concept of the department's Special Hunts program and ties it to the iSportsman application, currently being used on several of our public wildlife areas across the state to manage public use. By tying access to iSportsman it allows us to – 1) limit use by setting an occupancy limit for each tract, 2) increase participation of the Special Hunts on Private Lands program by allowing hunters to check-in the night before or day of a hunt if there are still vacancies, 3) capture harvest and use data, and 4) increase enrollment of land to the program in urban counties where landowners are hesitant because of open access.

iWIHA was kicked off as a pilot program in 2017 in 18 urban counties near the KC-Lawrence-Topeka and Wichita areas. For the 2018 spring turkey season, seven tracts were enrolled in iWIHA and hunters provided positive feedback about their hunting experiences.

LARVA CULTURE WALLEYE PROGRAM GAINING MOMENTUM

KDWPT's walleye egg-taking program produces millions of walleye fry and fingerlings each year. However, limited pond space and manpower prevented increasing the production of intermediates, which have a much higher survival rate. For the past two years, hatchery staff at Milford and Meade hatcheries have been developing a larva culture walleye program, allowing them to produce large numbers 8- to 10-inch walleye in an intensive system.

Five-day-old fry are stocked into Phase I larva culture production, a 40-45 day period during which the fish are trained to eat pelleted feed and reared to a fingerling size (1.5+ inches). They are then harvested and stocked into Phase II production (advanced fingerling training), which requires a dark room environment and daily care that includes cleaning, feeding, grading, sampling, and disease monitoring and prevention. Next, the fish enter Phase III production or the "grow out" portion in outdoor raceways.

The intensive larva culture walleye program has a very high return compared to fish grown in ponds, and produced 8- to 10-inch fish in 180 days.

In October 2017, more than 20,000 of these walleye were stocked into two Kansas reservoirs. Plans include growing the program, producing more walleye that will ultimately be recruited to the population and caught by anglers.

EARLY-SPAWN BASS ARE SHOWING UP IN SAMPLING

In 2009, biologists at KDWPT's Meade Fish Hatchery began developing an early-spawn largemouth bass program, creating a controlled environment where largemouth bass would spawn up to two months earlier than normal.

Few Kansas reservoir largemouth bass populations are self-sustaining, and stocking has had mixed results in older reservoirs. The primary forage in Kansas reservoirs is gizzard shad and the gizzard shad spawn earlier than largemouth, which means they are too big to provide forage for young-of-the-year bass. The early spawn fish, with their two-month head start, appear to be taking advantage of larger shad.

Since 2010, the early-spawn program has produced 2.5 million largemouth bass fry and 3.6 million largemouth bass fingerlings. Results are promising. Using genetic testing from tissue samples to identify early spawn bass, biologists are finding that up to 50 percent of the bass sampled in lakes where they have been stocked are early-spawn hatchery fish.

MONARCH CONSERVATION PLAN TAKES SHAPE

KDWPT is currently working with partners in the development of goals and objectives as part of the Kansas Monarch Conservation Plan. Goals include components to increase visibility of Monarch/native pollinator conservation needs and benefits, increase outreach and educational opportunities targeted toward specific audiences, improve habitat across the state, encourage more robust research and monitoring efforts, and offer best management practices for a range of land uses. Habitat improvement goals are yet to be determined for the Kansas plan, but Kansas is actively engaged with MAFWA and others on the development of the Mid-American Monarch Conservation Strategy and Southern Core Habitat Allocation Tool. Possible metrics to be considered are stem goals for milkweed species and other nectar resources, acres of beneficial habitats, and/or connectivity of beneficial habitats.

KANSAS DEER RESEARCH PROJECT

Kansas State University and KDWPT are collaborating on a comprehensive deer research project. The project is designed to learn more about mule deer and white-tailed deer in northwestern Kansas, and it began in February when 120 deer were captured and fitted with GPS radio transmitters.

Quicksilver Air, Inc. was hired to capture deer using a helicopter and nets. After a quick health check, including taking blood samples, captured bucks were fitted with GPS collars and released. Does were transported back to a mobile processing center where ultrasound was used to determine pregnancy rates, blood samples were taken, ear tags were attached and GPS collars fitted. Before pregnant does were released, they received small vaginal insert transmitters that will drop out when they give birth, allowing researchers to locate and capture fawns. The goal is to fit 80-90 fawns with radio collars this spring.

Researchers want to learn more about reproductive rates, deer movement, survival of different year classes, causes of mortality, and species interactions. Results will also provide insight on deer densities, deer-human interactions, crop damage, and the effects of landscape changes on deer populations. The three-year study is the first of its kind in Kansas, and biologists are anxious to see results.

FIVE-YEAR REVIEW OF KANSAS T&E AND SINC LISTS

KDWPT started its five-year review of the lists of Kansas species that are endangered, threatened or Species In Need of Conservation (SINC), which is required by the Kansas Nongame and Endangered Species Conservation Act of 1975. Any individual or group can petition KDWPT to propose an addition, deletion, or modification to the current lists by providing pertinent scientific information required within the petition form.

KDWPT relies on the Threatened and Endangered Species Task Committee to assist with the review process. The task committee consists of seven members representing various disciplines, and include staff from state and federal agencies, as well as state universities. To determine if a full review is warranted, the task committee examines updated scientific information and research for any species petitioned for a listing change. These recommendations, and any amendments to them, will be published in the Kansas Register for public comment for at least 90 days. After a full review is completed, the task committee makes recommendations to the KDWPT Secretary and any changes to the lists must be approved by the KDWPT Commission following a public hearing.

After the last five-year review completed in 2014, the redbelly snake, smooth earth snake, longnose snake, spring peeper, chestnut lamprey and silverband shiner were downlisted or removed from the Kansas Threatened Special List and added to the SINC list. The Eskimo curlew, black-capped vireo, and many-ribbed salamander were removed from the Kansas Threatened Species List due because there was no evidence of viable populations in Kansas. The northern long-eared bat was added to the SINC list.

Currently, the Kansas Endangered Species List includes 10 invertebrates, five fish, two amphibians, two birds and two mammals. The Kansas Threatened Species List includes six invertebrates, 11 fish, six amphibians, four reptiles, two birds and one mammal. The state SINC list includes 83 species.

2017 AERIAL LESSER PRAIRIE CHICKEN SURVEY SHOWS STABLE NUMBERS

Last spring's lesser prairie chicken survey showed population trends remain stable after six years of aerial survey data collection. The survey indicates an estimated breeding population of 33,269 birds, up from 25,261 birds counted last year. Results of the 2018 survey will be available this summer.

KANSAS IMPLEMENTS AUTO-RENEW OPTION AND 365-DAY LICENSES

In 2018, KDWPT introduced an auto-renew feature for select annual licenses and permits purchased online. License buyers will be able to opt in or opt out of the auto-renew feature at the time of purchase, or any time after purchase, through their online KDWPT account.

Also in 2018, many annual licenses and permits are now valid for 365 days from the date of purchase rather than expiring on Dec. 31 each year. This will provide better value for the same price, especially on licenses purchased late in the year. License buyers will have the option of receiving email reminders before their licenses expire, or better yet, they can select the auto-renew option and leave the worry to KDWPT.

COMMISSION BIG GAME PERMITS RAISE CONSERVATION FUNDS

KDWPT's Commissioner Big Game Permit Program allows local chapters of nonprofit organizations based or operating in Kansas that actively promote wildlife conservation and the hunting and fishing heritage to apply for seven big game permits. Once drawn, organizations can then sell the permits to raise funds.

In 2017 the seven big game permits raised \$72,850. Since the program started in 2006, nearly \$500,000 has been raised. Seven permits, one elk, one antelope or up to seven deer, are issued each year, depending on applicant preference. Winning groups are issued a voucher, which they can sell or auction to the highest bidder. The cost of the permit and 15 percent of the total price is subtracted and kept by the group, and the rest is remitted to KDWPT with a proposal for a conservation project. Once the project is approved, the money is returned to the group to complete the project.

In January 2018, seven lucky winners were drawn from 154 eligible applications. An organization or chapter can draw only once in a three-year period.

KDWPT RECEIVES LAND STEWARDSHIP AWARD

KDWPT was recently recognized by the National Wild Turkey Federation (NWTF) for the department's management of public lands. Recognition came in the form of a national land stewardship award, which was accepted by Keith Sexson, KDWPT Assistant Secretary for Fish, Wildlife and Boating, during the 42nd annual NWTF Convention and Sport Show.

NWTF determined this year's award winners based on how their work strengthens the organization's new "Save the Habitat. Save the Hunt." initiative. KDWPT was selected for the Land Stewardship award because of the department's efforts to provide quality habitat and hunting experiences, despite the challenges of being a state that is almost entirely privately-owned.

GREATER PRAIRIE CHICKENS SURVEYED

KDWPT has conducted aerial surveys of greater prairie chickens every three years. Wildlife biologists work with a contracted aerial service company to survey the state's greater prairie chicken range, including the eastern Smoky Hills, Flint Hills, Glaciated Plains, Northern High Plains, Osage Cuestas and Chautauqua Hills regions (northcentral and eastern half of the state). Surveys will occur from sunrise until approximately two-and-a-half hours after sunrise during the greater prairie chicken lekking period from March 15 to May 15.

Data collected from the aerial surveys will be used in conjunction with data from KDWPT's annual ground surveys to further document population trends and better determine the species' response to current management efforts.

WHITE-NOSE SYNDROME DETECTED IN KANSAS BATS

White-nose syndrome (WNS), a fungal disease that affects hibernating bats, has recently been confirmed in Kansas – the 32nd state to confirm the presence of the disease. Several dead bats, collected by KDWPT staff during cave surveys in Cherokee County in southeast Kansas and Barber County in southcentral Kansas, tested positive for the disease. Surveys were conducted between February 14 and March 1, and samples were tested by the U.S. Geological Survey (USGS) National Wildlife Health Center in Madison, Wis.

In 2014, KDWPT began working with private landowners to enter caves, survey bats and check for the fungus. No positive test results were found until this year. Biologists with KDWPT's Ecological Services Section, alongside other scientific groups, will continue survey efforts, but they'll need the help of willing landowners to locate and enter bat caves.

Of the more than 1,000 species of bats around the world, 15 have been found in Kansas. Big brown bats are the most common and widespread species in the state and live here year-round. WNS has not been documented in big brown bats in Kansas.

KANSAS ARCHERY IN THE SCHOOLS STATE TOURNAMENT

KDWPT hosted the 9th Annual State Archery in the Schools Tournament in April at Blythe Family Fitness Center in Pratt, Kan. Three-hundred-thirty-six students from 15 schools competed.

Archers shot for individual and team honors, as well as the opportunity to compete at the National Archery in the Schools Program competition in Louisville, Ken. this June. Each Kansas state competitor shot 30 arrows – fifteen arrows from 10 meters and fifteen arrows from 15 meters. A bullseye scores 10 points, so a perfect score would be 300.

In between watching competitors, onlookers also had the opportunity to visit with several conservation-based groups on-site, including the KBA and Pheasants Forever, as well as Kansas Hunter Education instructors.

Pratt Rotary Club members played a vital role in bringing the tournament to the Pratt community by providing a \$3,000 district grant, which covered the cost of the event's 200-foot safety curtain. Club members also volunteered to assist.

Kentucky

**KENTUCKY
STATE REPORT**
May 9, 2018

WILDLIFE

Black Bear Program

The Bear Program continues to build the foundation of a long-term black bear monitoring project to validate the population viability models used to set harvest quotas in core black bear areas within Kentucky. Currently 24 adult, female black bears are wearing radio-tracking collars. During the past two winters, researchers have documented an average of 2.5 cubs per adult female and 100% cub survival to one year of age. During 2017, the Bear Program assisted with the development of and began the implementation process of BearWise, a Southeastern Association of Fish and Wildlife Agencies bear awareness website (www.bearwise.org). The goal of this web site is to present a common message of bear awareness across the southern U.S. We hope to further embrace and disseminate the messages of the BearWise web site in the summer of 2018.

Deer and Elk Program

Kentucky hunters harvested 136,026 white-tailed deer during the 2017 season. Although it is a slight reduction from the 2016 deer harvest is still the fourth highest on record. Eastern KY experienced a severe EHD outbreak with over 4,625 sick or dead deer were reported. Overall weather conditions were extremely favorable for weekend hunters and deer movement and rutting behavior was excellent during the modern gun season. 710 total permits were available for the 2017 elk hunting season. Participation in the random drawing increased and 35,379 hunters submitted 78,353 total applications to hunt elk in Kentucky in 2017. Kentucky elk hunters harvested 185 males and 150 females for a total harvest of 335 elk amongst all available permit types. A new Kentucky state record elk was found in Martin County, scoring 416 5/8 inches. This is the third year in a row that the Kentucky state record has been broken, and is Kentucky's second ever All-Time Boone and Crockett Bull. Winter trapping efforts focused on in state translocation of elk within the elk zone. A total of 133 elk were moved to an area in Bell County. The elk were released at the proposed site of the Appalachian Wildlife Center and those animals will serve as a source herd for future trapping and relocation efforts and offer excellent research opportunities.

Small Game

The Small Game Program continues to focus the majority of its effort on northern bobwhite restoration. Work continues on 6 existing focal areas, and the program is seeking a new site in east KY minelands. The program contributed 6 papers the Quail VIII symposium in Knoxville, TN. Two new National Bobwhite Conservation Initiative Coordinated Implementation Program sites should kick off this year in Peabody WMA and Wendell Ford National Guard Training Center. Finally, the program is collaborating the University of Tennessee's Center for Native Grassland Management towards a 4-year bobwhite radio telemetry projection assessing the relationship between bobwhite and cattle. The program is the

final 2 years of its bobwhite restoration and is beginning preparations for the final report. A critical review was completed by the project leaders of all the focus areas in January and prioritized actions to finish strong were identified.

Turkey and Grouse Program

Turkey hunters checked 29,012 wild turkeys during the 2017-18 license year. The 2018 spring harvest of 27,151 (bearded birds) was down 18%, 11%, 14%, and 9% from last season (33,061) and the 5-year (30,434), 10-year (31,503), and 15-year (29,823) averages, respectively. Two consecutive bad hatch years have led to lower turkey numbers, while unusually low temperatures, wind, and snow during the early portion of season reduced hunter effort and success. Spring turkey harvest peaked in 2010 at just over 36,000 but has stabilized at 30,000-31,000 over the past 5 to 10 years. Since 2002 the county average spring harvest has exceeded 200 birds, since 2008 at least 50% of counties have harvested over 200 birds. While the popularity of spring turkey hunting remains strong across the state, the fall turkey season is less popular among Kentucky hunters, most of whom focus days afield on trophy deer hunting. The fall-winter harvest (either sex) dropped to 1,861 from 2,598 in 2016-17 and was the lowest since 2000. While the two bad hatch years reduced numbers, average to above-average acorn production concentrated flocks in forested habitats and reduced hunter success.

In 2017, after several public meetings to gather input on the plan, the KDFWR released a strategic plan aimed at increasing populations of ruffed grouse through habitat improvement. To date, program work has focused on developing partnerships to secure funding, personnel, and equipment to support increased forest habitat management, while regional staff have worked hard to increase forest management practices. Northeast Regional staff have improved over 5,500 acres on focal WMAs through prescribed burning, timber stand improvement, timber harvest, invasive plant treatments, old-field setbacks, and herbaceous plantings. In cooperation with KDFWR's Wildlife Health Program, USGS Wildlife Health Center, and the Virginia Department of Inland Fisheries and Wildlife, the grouse program conducted a second year of West Nile virus surveillance, testing for antibodies in hunter-harvested grouse.

Wildlife Diversity

During 2017, great strides were made in our Aquatic Restoration Initiative when the mussel fauna was restored to the Licking River in northeast Kentucky. Malacologists worked with multiple state and federal agencies, as well as through the department's Center for Mollusk Conservation to undertake and complete this work. Staff continued to refine and complete the Kentucky Monarch Conservation Plan. Efforts to implement the plan have begun. Disease monitoring and surveillance continued for WNS, and statewide for amphibian diseases. Within our SGCN focus work, new surveys were begun for the eastern spotted skunk, and genetic work has been initiated to determine if the Louisville Crayfish is in fact two different species. Avian biologists continue to conduct MAPS stations throughout study sites in the state and are continuing studies into the Loggerhead Shrike decline.

Wildlife Health Program

In 2017, the wildlife health program was active in a wide range of initiatives including wildlife health monitoring, disease response, and management. The program continued to respond to reports of disease from hunters, members of the public, and wildlife biologists.

White-tailed deer herd health examinations were carried out at four wildlife management areas in Kentucky (Clay, Taylorsville Lake, Kleiber/Rich, Fishtrap Lake). Ongoing health surveillance initiatives included surveillance for chronic wasting disease in deer and elk, tick-borne disease, and statewide amphibian disease monitoring. The wildlife health program worked with the USDA-WS to respond to the detection of raccoon variant rabies in western Virginia. A large scale die-off of white-tailed deer associated with an outbreak of epizootic hemorrhagic disease took place in the Appalachian plateau region, with 4581 sick or dead deer reported in Kentucky. Investigation of mortality and diagnostic evaluation was carried out by wildlife health program and agency staff. Ongoing baseline health initiatives included quail health assessments at Peabody WMA and evaluation of rodenticide toxicity in raptors. A new study of West Nile virus in grouse was initiated with future plans for mosquito surveillance for WNV in grouse habitat.

Kentucky Fish and Wildlife Information System (KFWIS)

Providing maps for wildlife management areas (<https://fw.ky.gov/More/Pages/Wildlife-Management-Areas-and-Public-Hunting-Areas.aspx>) and managing the species distribution database (<http://app.fw.ky.gov/speciesinfo/speciesinfo.asp>) continued as priorities for KFWIS in 2017. We continue to support approximately 90 desktop ArcGIS users across the state. While desktop GIS will continue as an important tool for spatial analysis, new technologies are available to provide similar access to geospatial data. Emerging priorities include mobile technology and using web applications for map delivery. KFWIS established an ArcGIS Online account (<http://kdfwr.maps.arcgis.com/home/index.html>) and published several map services. The most used online map is 'Kentucky Elk Hunting Areas' (<http://arcg.is/fqWPT>). The elk map is integrated with the Department elk quota hunt application, allowing users to select specific areas shown on the map. The ArcGIS Online account also allows users access to apps such as 'collector', 'explorer' and 'survey 123'. KFWIS has worked with the Diversity Program to develop a 'collector' application used for monitoring barn owl nests. We will continue to learn about mobile technology and how to best apply those tools to Fish & Wildlife Management and to provide the public with better tools for accessing public land.

Migratory Bird Program

The 2017-2018 hunting season for ducks and geese was one of the best on record. Exceptional numbers of Canada were present in January and February for the eastern 2/3 of the state with likely record harvest. Ducks were present in excellent numbers statewide for most of December and January. Sandhill cranes migrated thru Kentucky in large numbers. Surveys peaked with 17,269 cranes counted in Kentucky on February 5th. The wintering group of whooping cranes continues to return to Hopkins County each year. This winter there were up to 8 whooping cranes present which is a high count for Kentucky. The Migratory Bird Program hosted a wetland review at Ballard Wildlife Management Area in June. Over 50 participants from 11 states participated in the review. The discussions are being used to develop new management plans for the area. Plans are currently being developed for new moist soil units, water control structures, hunting strategies, as well as review of the management of uplands and forested wetlands on the area. The program developed a public sounding board, which allows for conversations with surrounding landowners as the WAM evolves. The program completed a study of cormorants nesting on Kentucky and Barkley lakes. The diet of these birds, while feared by fishermen to be gamefish, proved to be mostly roughfish. The Least

tern project continues with all nesting colonies in the state being posted and monitored by the program. Adults were color marked and over 200 nests were monitored to determine causes of nest loss. Flooding continued to be the major source of nest loss. A total of 1,728 wood ducks, 1,220 Canada geese, and 1,377 mourning doves, 5 Sora and 1 Virginia Rails were banded during the summer banding period.

FISHERIES

Habitat Program

KDFWR's habitat branch plans and coordinates small and large-scale fish habitat projects across the state. Each year, with the assistance of the habitat branch, the seven fishery management districts focus on small-scale projects on their state owned and managed lakes along with larger reservoir projects limited to small areas. Small-scale projects in 2017 covered many lakes across the state. Several habitat types are used to create habitat. Annually, several thousand donated Christmas trees, thousands of feet of donated scrap gas pipe, pallets, and concrete bricks are used to build habitat structures and sites. GPS coordinates and habitat types are provided in Google maps format for the public on the KDFWR website.

Large-scale projects require critical coordination and teamwork as they involve several state and federal agency interests along with angler and county tourism impacts. Project plans bring together a multitude of partners to provide project planning, habitat structure acquisition and construction, heavy machinery donations, and ultimately staging and placement of the structures in large reservoirs. In 2017-18, the habitat branch completed work on a 4-year project in Cave Run Lake, assisted district branches with smaller-scale habitat projects, and began a larger, multi-year project in Carr Creek Lake.

Statewide Stream Surveys

Kentucky is one of the most water-rich states in the contiguous United States, with thousands of miles of streams and rivers within its borders. Until recently, very little data regarding sport fisheries existed for the majority of these waterbodies, particularly small navigable rivers and streams. The Kentucky Department of Fish and Wildlife Resources (KDFWR) began conducting statewide stream sport fish (i.e., largemouth bass, smallmouth bass, rock bass, bluegill—surveys in 2012 with the main goal of determining relative abundance, size structure, growth rates, condition, etc. of sport fish populations. KDFWR uses data collected from these surveys to track trends in sport fish populations, develop new research projects, guide management decisions such as regulation changes, and promote fisheries and recreational opportunities across the Commonwealth.

To date, 37 waterbodies have been sampled with electrofishing for the first time, updated from outdated sampling data, or had more intensive and representative samples conducted on them. KDFWR has already used data from a number of these sampling events to help promote stream fisheries throughout the state through press releases as well as a webpage dedicated to stream fishing. This data has also helped strengthen its Blue Water Trails series that highlights paddling and fishing opportunities on flowing waters in Kentucky.

Green River Dam Removal and Recreational Access

The U.S. Army Corps of Engineers determined that five of their locks and dams on the Green River in Kentucky no longer serve the federally authorized purpose of navigation. The Kentucky Department of Fish & Wildlife Resources (KDFWR) participated in a workgroup of state and federal agencies and non-government conservation organizations to provide guidance and assistance with transfer of ownership to state, local, or non-government organizations for potential removal of dams and development of river-based recreational access. KDFWR funded a feasibility study for the removal Green River Lock and Dam 6 which was used as a reference tool for the workgroup and others.

The workgroup advised Congressional and state leaders as well as local interests playing a key role in the passage of the 2017 Water Infrastructure for Improvements to the Nation (WIIN) Act that de-authorized the structures, four of them specifically for dam removal and recreation access. KDFWR has a key role in the WIIN Act as recipient of properties at Green River Lock and Dam 6 and Barren River Lock and Dam 1.

Green River Lock and Dam 6 failed when the river scoured a hole under the dam in November 2016. The U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service crews from the southeast removed the dam in 2017, and KDFWR provided guidance and assistance with the salvage and rescue of mussels stranded by the lower river levels. Over 2,000 mussels were moved including 32 species (two federally listed endangered). Since that time, KDFWR has worked with the local authorities to construct recreational access at the site.

Asian Carp

Since 2013, Kentucky has worked with several other agencies and developed unique programs to decrease potential for ecologic and economic impacts of Asian carp. The invasive fishes are being confronted on two fronts with a coordinated, multi-state effort on the Ohio River and in Western Kentucky's Kentucky and Barkley lakes. The Ohio River effort is funded by mainstem states and the USFWS grants associated with the 2014 Congressional amendment to the Water Resource Reform and Development Act (WRRDA). The WRRDA amendment by Congress increased funding to the USFWS' general fund with stipulations that the Service work with states to address expanding populations of Asian carp up the Ohio River. The multi-agency efforts in the Ohio River at or above Louisville Kentucky employ several strategies against the carps. They include monitoring population demographics, examining the invasive fishes' use of tributaries and movements among pools, early detection in Ohio River pools in West Virginia and above, and removing all Asian carp collected in the Ohio River from the Cannelton Pool and above. Only Asian carp used for telemetry purposes are released. The effort expended to date has revealed much information concerning movement, habitat use, and densities of Asia carp as well as removal of thousands of pounds of the invasive fish; mostly in pools associated with the McAlpine Lock and Dam at Louisville. Asian carp densities above the Louisville Dam have not increased, and we have noted some pools with lower density trends.

In Western Kentucky, Tennessee, Kentucky, and the USGS are hoping that sound barrier technology can be implemented in the Tennessee and Cumberland Rivers. Efficacy of the sound system is planned for testing below Barkley Dam in September. Additionally, telemetry work

with Murray State University and Tennessee Tech University has increased in scope in an effort to assess Asian carp movement patterns in the reservoirs. We are also working with the USFWS using electrified Paupier nets to assess relative population sizes of bighead and silver carp in the two reservoirs. Kentucky continues to work with the commercial fishing industry targeting Asian carp to help processors and commercial fishermen. The Commonwealth is close to approving contracts with a new public/private partnership concept, and funding for the project should be appropriated in summer of 2018. As part of the partnership, Kentucky is investigating a potential increase in another Asian carp harvest subsidy and a commercial fishermen training module. In order to facilitate the fishing harvest, Western Kentucky's Critical Species Western Branch has been increased removal effort of its six staff, and they also provide oversight of the harvest efforts, sample year around for Asian carp, investigate experimental harvest methods. Kentucky will open access to a commercial grade, 7-ton flake ice machine in June 2018, which will be used to get ice to its Asian carp processors and commercial fishermen at no cost.

Michigan

**MICHIGAN
STATE REPORT**
June 1, 2018

Keith Creagh, Director
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909

STAFFING

The Michigan Department of Natural Resources (DNR) has 1,470 permanent employees, more than 1,600 non-career/seasonal employees and a \$410.2 million budget that supports programs for wildlife and fisheries management, state parks and recreation areas, trails, boating programs, conservation and law enforcement, forest management, state lands and minerals, the historical museum and archives.

Keith Creagh is the Director of the department. Bill O'Neill is now serving as the Natural Resources Deputy as Dr. William Moritz relinquished that position but remains a part-time employee with the department.

FISCAL YEAR 2017-2018 BUDGET

The DNR budget is \$408,967,300 for fiscal year (FY) 2018. The General Fund increased by forty-three percent from \$39,910,000 in 2017 to \$56,944,900 in 2018. The DNR is funded by state General Fund revenues, federal funds, and a variety of restricted funds. The budget consists of 14 percent General Funds, 19 percent federal funds and 67 percent restricted funds.

Federal funding consists mainly of special purpose categorical grants from various federal agencies, such as the U.S. Department of the Interior, the U.S. Department of Homeland Security, and the U.S. Department of Agriculture. Federal funds support programs for wildlife and fisheries habitat and management, forest management, recreation and other natural resource programs. Restricted funding is generated from sales of licenses, user fees, and other charges. These funds support wildlife and fisheries programs, operation of Michigan's 102 state parks, harbor and boating access site development, marine safety enforcement and education, snowmobile and off-road vehicle trail repair and development, and operation of Michigan's 135 state forest campgrounds. The DNR also generates timber sales revenue from state lands. Approximately 90 percent of timber sales revenue goes to the Forest Development Fund and is used for the protection and development of our state forests. The other ten percent of timber sales goes toward the Game and Fish Protection Trust Fund.

The DNR budget grew substantially from 2017 to 2018. State Parks received an infusion of \$7 million from the General Fund to continue to address their infrastructure backlog. A challenge grant of \$5 million was provided to leverage private funds to continue the work of the Iron Belle Trail which will allow users to start on Belle Isle in Detroit and hike or bike through the state to Ironwood on the Wisconsin border. The rewrite of the Land Ownership Tracking System,

which maintains the DNR land and mineral lease records, received an additional \$1.9 million in General Fund to fully fund the project. Additional funds of \$1 million were received to assist with Chronic Wasting Disease.

The DNR will be starting another conservation officer academy on July 15. Approximately \$1.8 million was provided to enhance Great Lakes Enforcement and Special Investigations units which specialize in enforcement of commercial fishing regulations and investigations into the commercialization of fish and wildlife respectively. General Fund continues to contribute approximately 26 percent of the \$42.4 million law enforcement budget due to the strong enforcement role the officers fulfill in the rural areas of Michigan.

The DNR continues to try to influence the impact of Invasive Species Program. In addition to the \$5 million in General Fund the DNR receives annually, \$200,000 was included to assist with the invasive species work. Invasive species and their impact on natural resources will continue to be a budgetary priority of the DNR.

LEGISLATIVE ACTIVITY

Many of the same issues, especially public land ownership, public land accessibility, and the dedication of restricted funds for land acquisition and development, continue to be discussed in elected offices and in the media. The DNR continues to work with the Legislature on the adoption of its Managed Public Land Strategy plan and the land cap removal.

NOTEWORTHY DIVISION ISSUES

Chronic Wasting Disease (CWD) in Michigan's deer herd continues to be detected in specific areas of the central lower portion of the state. The DNR held a CWD Symposium bringing together experts from around the nation and world earlier this year to discuss transmission, pathogens, maternal transmission, species susceptibility, role of genetic influences, importance of applied research, surveillance and disease management. The Department has held numerous meetings across the state to present updates to the public and seek input. The Natural Resources Commission and the DNR continue to work together to address this disease. The DNR will continue its monitoring efforts during the 2018 deer season and will encourage hunters to have their deer tested.

The State of Michigan and DNR continue to advocate for the construction and operation of the Brandon Road Lock and Dam to prevent the spread of invasive carp. The DNR awarded a contract to a firm to conduct a "Carp Tank Contest" in which entrepreneurs submitted ideas to keep the invasive carp from entering the Great Lakes. Prize money was awarded from the \$1 million in General Fund that was provided in 2017 for the contest.

Minnesota

MINNESOTA STATE REPORT

June, 2018

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Strategic Planning

The Division of Fish and Wildlife escaped a serious, immediate crisis with the critical fee increase for the biennium beginning July 2017, but there is still great urgency to create a clear set of priorities to help us address challenges such as declining recreation and demographic trends in our traditional support base, changes in fish and wildlife values, forecast workforce retirements, and funding instability. To be proactive in shaping our future, the division began a strategic planning process in July 2017 that will conclude in fall 2018. We are using a collaborative process with multiple staff work teams from across the state, job types, and programs to examine and develop the division's priorities and structure to shape the future of our work over the next 10+ years, and immediate action steps for the next 2-3 years. As part of clarifying our priority work moving into the future, we will also be explicit about what we will no longer do.

Legislative Update

The Minnesota Legislature is wrapping up the 2018 session as the update is submitted, so no bills have become law. Policy and budget provisions initiated by the State were relatively few and have had broad support at the Capital.

In an effort to gain additional local support for our modest elk herds in Northwestern Minnesota, we proposed to allow landowners successful in obtaining an elk hunting license the ability to sell their license to a Minnesota resident at no more than the cost of the license. Landowners may not have the time to hunt or not be a hunter, and providing the opportunity to a family member or friend may improve how elk are viewed.

In 2017, the legislature passed a much needed fee increase for fishing and deer hunting licenses. Our largest deer-related non-profit (Minnesota Deer Hunters Association) was influential in getting the fee increases passed. In recognition of their support, we are seeking a change to how deer revenue is deposited into dedicated accounts. Currently, \$2 out of a \$34 license is deposited into a Deer Management Account to be used as the name implies. We are seeking to increase that amount to \$16. It is important to note that not all deer related spending comes from just the Deer Management Account, and that hunters are getting their license worth in deer management. Yet this change will add transparency to how license dollars are spent.

We proposed allowing cast nets on certain waters to harvest bait. A three year cast net trial was popular with catfish and sturgeon anglers, with no issues related to moving bait from one water body to another.

Finally, we are seeking \$1.56M General Fund dollars to support our response to chronic wasting disease (CWD). A recent conference committee bill provides \$1.3M for our response with a mix of General Fund and Game and Fish Fund. CWD was recently found in three cervid farms and our response plan call for surveillance of wild deer in the vicinity of the positive cervid farm for three years, provided the disease is not found during that timeframe. In April, the Office of the Legislative Auditor released a report on the [Board of Animal Health's Oversight of Deer and Elk Farms](#). There has been a lot of interest in CWD and cervid farms in part because of this audit. We also are responding to CWD in wild deer—17 positives over the past two years in a southern Minnesota county.

There are two provisions we are tracking that we oppose. First is a provision that would prevent the State from taking legal action to gain public access to state lands in Clearwater County. Two years ago a landowner gated a road to the Wildlife Management Area, and it is our belief the State has prescriptive rights to the road. The second is a moratorium on muskellunge stocking in Otter Tail County. There are three lakes in the county that are stocked with muskies at low densities. Some county residents and lakeshore owners have expressed concerned about the impacts of muskie on walleye populations. Ironically, fisheries survey data indicate the walleye population is strong in two of the lakes (the third lake is primarily a bass/panfish lake located within a state park).

Mille Lacs Lake Management

Conservation concerns have eased on Mille Lacs Lake due to the recruitment of the very strong 2013 walleye year class to the spawning stock. However, concern remains for future walleye recruitment, so conservative management remains warranted. Mille Lacs' 2018 safe harvest level is 87,800 pounds for the State's portion of the State-Tribal shared regulated harvest. The walleye fishery will be managed with a catch and release only regulation for open water and a 1 fish bag during the winter season. Walleye population estimates will be conducted in 2018 and 2019.

Extensive work is underway to better understand several fish community changes that may be partly driven by altered physical and chemical dynamics, notably clearer water that started with clean water legislation twenty years ago, longer growing seasons, and several aquatic invasive species, including Eurasian watermilfoil, spiny water flea and zebra mussels. A trend in increasing juvenile walleye mortality has now been documented, while northern pike and smallmouth bass abundance have increased. An extensive predator diet study and bioenergetics analysis was completed to determine potential causal mechanisms to explain elevated juvenile walleye mortality. DNR completed a hooking mortality study in 2016 catching and releasing 1,800 walleye of specific sizes throughout the fishing season and under a variety of environmental conditions and fishing methods.

DNR continues to meet with a 16-member Mille Lacs Fisheries Advisory Committee comprised of local and statewide fishing interest, business owners, local government officials, and an academic representative. The committee meets approximately bi-monthly to discuss and advise on fisheries management topics, such as creel surveys, hooking mortality, stocking, treaty management and fishing regulations. Thus far the committee has recommended several areas for

improvement that are currently being implemented by DNR, including conducting studies and altering creel survey questions to refine estimates of hooking mortality.

Mille Lacs hosted the \$1 million Bassmaster Angler of the Year Championship in September 2017, for the second consecutive year. The lake continues to gain national recognition as one of the best smallmouth bass fisheries in the country. A population estimate was completed in 2017 which showed approximately 67,000 smallmouth bass greater than 12 inches in Mille Lacs.

Prairie Plan Implementation

In 2013-14, ten local technical teams (LTTs) were formed across Minnesota's western landscape to implement the Minnesota Prairie Conservation Plan. LTTs are composed of local resource managers from partner agencies. For more information, <http://www.dnr.state.mn.us/prairieplan/index.html>.

Minnesota has finished the first planned revision of the Prairie Conservation Plan. We have already completed a mapping exercise realigning some of the core and corridor areas on the map to take advantage of new information since the original mapping effort. We are currently developing the Implementation Plan, led by The Nature Conservancy, and hope to have a draft by the end of the summer. Partners will sign a second MOU this year, probably in conjunction with events celebrating the tenth anniversary of the passing of the Clean Water, Land, and Legacy Amendment.

We are in the fourth year of the Pheasant Summit Action Plan. The third Pheasant Plan Report Card was released this spring. <http://www.dnr.state.mn.us/pheasantaction/index.html>. This fall we will be developing the final report card for this phase of the Pheasant Summit Action Plan as well as assessing successes and areas that need additional attention.

Climate Change Adaptation and Mitigation

To support implementation of the Department-wide directive on Climate Change Adaptation and Mitigation in Natural Resource Management, the Division of Fish and Wildlife have provided staff with detailed guidance on how to address climate change in management plans, technical consultations, infrastructure, land acquisition, and habitat management. To support staff in implementing this new policy, the Division developed a *Climate Change Handbook* with information on climate change, effects on fish, wildlife and ecosystems, adaptation, mitigation, training opportunities, case studies, recommended resources, and contacts. Trainings continue to be offered to staff to help them more effectively integrate climate adaptation into their work. A division climate change team publishes a monthly climate change e-newsletter for staff, and is currently developing recommendations to leadership, based on a staff survey, to improve our ability to adapt to climate change now and into the future.

White-tailed Deer

The winter of 2017/18 was again mild throughout most of the state and, coupled with two previous mild winters, deer populations have increased significantly. Numerous deer permit areas are once again above population goals following multiple conservative antlerless deer harvest. The 2018 deer season will see increased opportunities to harvest antlerless deer throughout most of the state, and total harvest is likely to be higher than the past 4 years.

In 2017, DNR continued with the public process designed to inform its first-ever statewide deer management plan. The process included nearly monthly meetings of a 20-member citizen advisory committee comprised of representatives of hunting, agriculture, forestry, public health and conservation organizations, a tribal representative, and several “at-large” members. A draft plan was released for public and tribal comment this spring. Staff are reviewing public comment and anticipate finalizing the plan in summer of 2018.

DNR continued to implement the chronic wasting disease (CWD) response plan, conducting precautionary surveillance in north central and central Minnesota in response to positive detections within cervid farms and in southeastern Minnesota due to proximity to Minnesota’s disease management zone, where 11 wild deer tested positive during the 2016 deer season. Out of more than 11,000 samples, no wild deer tested positive for CWD in precautionary surveillance areas; however, DNR will continue to mandatory testing in areas around the cervid farms for another two years. Another six deer tested positive in disease management area 603, a small geographic area of SE Minnesota, after testing 1,479 deer during the regular hunting season and extended seasons. Minnesota has implemented an aggressive strategy to contain the disease including liberalized hunting in 2018 and an increased engagement and outreach plan designed to identify barriers and incentives for hunter and landowner participation in the disease response.

Minnesota DNR also initiated two deer research projects in 2018. Over 100 deer were collared in and around the CWD disease management zone in southern Minnesota to study deer dispersal and movement and the associated risk of disease transmission. This project will also inform vital rates used in deer population modeling. Deer were also collared in northern Minnesota for a study of habitat use to inform forest management strategies designed to maintain winter habitat.

Northern Pike Zone Management

DNR implemented new Northern Pike regulations zones across the state beginning spring 2018. This is the first time in more than 50 years that Northern Pike regulations have been changed. The new regulations are based on a careful review of Northern Pike population characteristics (e.g. growth, abundance, forage etc.) across the State. The so called “Zone approach” to Northern Pike management utilizes three distinct zones with specific harvest regulations tailored for each zone.

North-central Zone - The majority of the state will be in the north-central zone, where the issue is overpopulation of small pike. Regulations allow more harvest of abundant small pike and shift population size structure to more medium-sized pike.

Northeast Zone – Regulations maintain harvest opportunity and protect large fish already present.

Southern Zone – Regulations increase pike abundance and improve the size of fish harvested. Anglers and spearers will be able to keep two fish, with a minimum size of 24 inches.

Zone	Angling regulation	Spearing regulation
North Central	10 fish bag limit 22-26" Protected slot limit 2 fish allowed over 26"	10 fish bag limit 1 fish between 22-26" and 1 over 26"; or 2 over 26"
North East	2 fish bag limit 30-40" Protected slot limit 1 fish allowed over 40"	2 fish bag limit 1 fish allowed over 26"
Southern	2 fish bag limit Minimum length limit 24"	2 fish bag limit Minimum length limit 24"

Update on Constitutionally Dedicated Legacy Funding – 10 Year Anniversary

Since 2008, a portion of Minnesota's sales tax has been constitutionally directed to protect, restore, and enhance forests, prairies, wetlands, and habitat for fish, game, and wildlife via the Outdoor Heritage Fund (OHF). The funding must supplement, not substitute for, work done with traditional sources of funding. The DNR, along with other agencies and organizations, applies for these funds annually on a competitive basis. In the first 10 years of OHF, nearly \$1 billion has been appropriated to fish and wildlife habitat programs and projects. The tenth year of funding will be appropriated in July 2018, with \$32 million slated to come to DNR and \$70 million to other agencies or partner organizations. DNR administers the Conservation Partners Legacy (CPL) small grants program, which awards competitive and non-competitive grants of \$5,000 - \$400,000 to conservation groups, NGOs, and local governments for habitat projects. In the first 9 years of OHF, over \$454 million was appropriated to the CPL grant program, with an additional \$11 million slated for the 10th year. This program has improved or protected over 280,000 acres of habitat with 475 CPL grants. CPL has leveraged nearly \$15 million in non-state funding from 175 conservation clubs and government entities throughout Minnesota.

Marketing and R3

Research efforts were completed to forecast license sale changes into 2030 linking to state demographic and census changes.

- Erin M. Burkett and Richelle L. Winkler. (2018). *Recreational Fishing in Minnesota: Using an Age-Period-Cohort approach to understand fishing participation*. Michigan Technological University. Houghton, MI, USA.

- Dayton, Megan (State of Minnesota). LeDee, Olivia (State of Minnesota). Brower, Susan (State of Minnesota). Albrecht, Rebecca (Lawrence University) (2017). ***Projected Changes to the Number of Deer Hunters in Minnesota: 2015-2030.***

Hunting shows a decline in males age 65+ while showing an increase in female hunters. While participation by women is expected to continue to increase, participation by women drops sharply after age 20-24 and is only estimated to cover ~45% of the losses from men in 2030 - a calculated net loss of > 20,000 Minnesota hunters.

A similar outcome is forecasted for angling as well. Assuming patterns from the recent past continue, the number of male anglers could decrease by 55,000 by 2035. This decline would primarily be due to the aging of Baby Boomers moving through the system. Female anglers are projected to remain fairly stable in number through 2035.

An R3 grant from Recreational Boating and Fishing Foundation allowed MN to test a lifetime license promotion to encourage purchasing a legacy gift for children and grandchildren and for aging license holders to continue in the sport of hunting and fishing through the purchase of a lifetime license. This promotion created a return on investment (ROI) of \$11,441. DNR will now promote this opportunity annually through direct email to ELS customers.

Minnesota DNR Angler and Hunter Recruitment & Retention Grants information can be found at http://www.dnr.state.mn.us/angler_hunter_grants.html. Projects from Round #1 of the capacity-building grant program have been completed. Rounds #2 and #3 projects will be wrapping up June 30, 2018. Total participants from the 12 projects completed to date is 8,393. A fourth round of grants with \$150,000 in funding available was announced in May. Applications are due June 28, 2018.

The angler and hunter R3 coordinator position was filled in December 2017. Work has been underway to convene a Minnesota R3 council this summer, with the first meeting in June. Efforts have also focused on assembling the building blocks of a statewide angler and hunter mentor training program along with expansion of the adult-learn-to-hunt programs. The Becoming an Outdoors Women program continued with two weekend workshops and more than 50 additional classes offered annually. A new effort to reach diverse audiences with summer fishing skills programs was piloted through summer intern positions in select state parks in 2017 and will continue in 2018. Special focus was placed on Hispanic-Latino and SE Asian communities. In 2017 the program was successful by drawing audiences that were 71% diverse in the metro area and more than 40% diverse at eight other locations throughout the state. These rates are higher than the statewide or metro area demographics.

Minnesota State Wildlife Action Plan

Minnesota Wildlife Action Plan 2015-25 (MN WAP) focuses on a habitat and species approach to the conservation of Species in Greatest Conservation Need (SGCN). The habitat approach is a landscape-scale approach to sustaining and enhancing terrestrial and aquatic habitats for Species in Greatest Conservation Need (SGCN) and other wildlife within a prioritized Wildlife Action Network (WAN). The Wildlife Action Network is available as a shape file on the MN WAP website (mndnr.gov/mnwap) and is being incorporated into a number

of conservation projects including watershed plans and MNDNR's Watershed Health Assessment Tool and Wildlife's Strategic Wildlife Acquisition Team prioritization process.

The Prairie Coteau has been identified as the first Conservation Focus Area under MNWAP and a coordinator has been hired to work with staff and partners to implement and monitor conservation actions in the Conservation Focus Areas. Progress has been made on species specific goals in MN WAP including conservation efforts focused on bats, mussels, pollinators and wood turtles.

Wildlife Disease

DNR participated in the 2017 USDA national surveillance plan for highly pathogenic avian influenza virus (HPAIV), which called for sampling of 1,140 dabbling ducks (live or dead) during the summer, fall, and winter of 2017-2018 and was distributed across six watersheds in Minnesota. MNDNR did not detect HPAI virus from any samples, and total sample prevalence of type-A influenza was 15.4% (95% CI: 13.3, 17.6), which was similar to the previous year's estimate (16.8%).

The primary goal of our 5-year study is to determine cause-specific mortality of adult moose and to investigate how ambient temperatures relate to moose productivity, reproductive success, and survival. Our study has highlighted the complexity of factors affecting moose health and shows no clear smoking-gun. Wolves are not the sole drivers of the decline in adult moose population, although they play an important role in mortality. We have shown that they select for the young (>3yrs), old (>9yrs), and sick (at least 40% of wolf-killed moose were predisposed due to health issues, likely an underestimate); which is exactly what these predators should be doing in this system. However, as documented by the concurrent work on calf survival, wolves are playing a major role in calf mortality and reduced recruitment. Parasitic infections, primarily *P. Tenuis* and liver flukes, transcended all mortality categories and had a broad effect, either causing direct mortality or reducing overall fitness, on moose survival. We still have much work to do on understanding how potential ultimate drivers (body condition and climate) may be influencing a moose's ability to handle various parasite loads and why it tips the scale for some, while others seemingly survive better.

Missouri

**MISSOURI
STATE REPORT**
May 25, 2018

Sara Parker Pauley, Director
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Financial Update

The Fiscal Year 2018 budget for the Missouri Department of Conservation (Department) continues at less than 1 percent of the total state government budget in Missouri. The primary sources of revenue are the one-eighth of 1 percent Conservation Sales Tax, at about \$120 million, and permit sales and Federal reimbursements, at about \$66 million. Total receipts for Fiscal Year 2017 were \$192.4 million.

In Missouri, conservation pays its way, and is good for Missouri's jobs, economy, and quality of life. In Missouri each year, more than 1 million individuals go fishing, 500 thousand hunt, and 1.7 million view wildlife. Fish and wildlife recreation generate \$4 billion in economic impacts, and there is an additional \$8 billion in economic impacts from the forest products industry, for a total of \$12 billion in economic impacts. This economic activity supports 99,000 jobs and generates \$507 million in state and local taxes. Conservation makes Missouri a great place to live, work, fish, hunt, view wildlife, and be outdoors.

Organizational Update

Sara Parker Pauley continues as the ninth Director of the Missouri Department of Conservation. In May 2017, the Department employed a new Assistant to the Director for Operational Excellence, Todd Sampsell, to lead continuous improvement efforts and transformation efforts for organizational operations and processes. The Department has completed seven lean process improvement events and numerous continuous improvement efforts by staff (including process improvements for issuing wildlife collector's permits, employee vehicle logs, and information technology project selection).

Mike Hubbard, formerly Resource Science Division Chief, will be the new Deputy Director for Resource Management, replacing Tom Draper, who is retiring effective June 1, 2018.

The Department will have a hiring freeze from June 16 to August 1, 2018 to implement the first phase salary adjustments related to a job study conducted in 2017.

The Department of Conservation currently has 1,376 full-time salaried employees, several hundred part-time hourly employees, and benefits from the partnership of thousands of volunteers and many conservation and outdoor organizations.

Highlights of Conservation Challenges and Successes

Refining the Strategic Plan. A new strategic plan was approved for Fiscal Years 2019-2024 with four strategic goals and 14 outcomes. Each outcome has an outcome champion and team. The plan will be evaluated each year prior to the preparation of the expenditure plan for the following year. The strategic plan includes outcomes and measures that clearly link operational efforts with top level goals. The Department's mission is to protect and manage the fish, forest, and wildlife resources of the state; to facilitate and provide opportunity for all citizens to use, enjoy, and learn about these resources. The Department's values include: excellent public service is essential—we work to deliver more than is expected; all citizens are important—we respect their opinions and value their trust; Missourians are partners to achieve conservation success—we communicate openly and look for ways to make it easier to partner; fairness, objectivity, sound science, integrity, accountability, and transparency guide our actions; and employees are the Department's most important asset—we all work to advance conservation by being results driven, working as a team, serving as ambassadors for conservation, and living out the conservation ethic through our actions. The Department vision is a future with healthy fish, forests, and wildlife where all people appreciate nature.

Communicating With Missourians. The Department continues to invest communications effort and time into growing social media, texting at facilities, and email communications. All of the Department's social media channels, including Facebook, Twitter, Instagram, and YouTube, continue to grow each month. Facebook is the largest social media channel for the agency with more than 260,000 followers. The Department's website has 4.6 million unique visitors annually. The Department also utilizes both email communications, which currently has 462,402 subscribers, and the free *Missouri Conservationist* magazine, mailed to more than 550,000 individuals, to share the value of fish, forest, and wildlife resources. The new MDC Wild Webcast series highlights key conservation topics and provides a unique opportunity through technology to ask live questions of Department experts. In 2018, we are increasing our live reach through social media by also adding two Facebook Live conversations to engage the public. The "Trees Work" outreach has been integrated into communication efforts to increase awareness of the benefits provided by trees and forests. Trees Work has been recognized by the Arbor Day Foundation with the Public Awareness of Trees Award. A research project showed that public awareness of the benefits associated with trees rose 13 percent in communities where we targeted messaging over a three-year period. Messaging, outreach, and promotion for Trees Work expanded in the last two fiscal years to a statewide audience. In addition, last year the Department conducted a communications audit with an outside company to determine how effective communication is with Missourians and employees and has included the findings in ongoing efforts.

Listening to Missourians. Delivering excellent public service means listening to and understanding what Missourians say about conservation programs and services. In the recent fiscal year, there were 127 public engagement opportunities, including open house meetings, annual hunter surveys, conservation area plan comment periods, regulation committee comments, and

Ask MDC contacts. The Department also offers a 30-day public comment period for all area plans for citizens to provide public review about management at Department areas. In this fiscal year, over 50 plans will be available for review. The Department celebrated its 80th Anniversary in 2017 by gathering input from citizens at 17 public meetings and events throughout the state. The Department also hosted its first Missouri Conservation Partners Roundtable event, a gathering of over 70 conservation partners to provide feedback on the Department's draft strategic plan.

Mobile Applications and Award Recognition. The Department developed the MO Hunting mobile application, which enables Missouri hunters, anglers, and trappers to purchase and view annual permits. Deer and turkey hunters also can Telecheck their harvests using the app, which provides an electronic permit stored on your mobile device. New regulations consider this to be a valid permit. The MO Hunting app has received a Governor's recognition award. The Department has also developed downloadable apps for MO Fishing, Fall Colors, and the Missouri Conservationist magazine. The Department's efforts to enhance efficiency for citizens using technology has been promoted as an example for other State of Missouri Departments.

Permit Delivery Approach. Hunters, anglers, and trappers in Missouri have been buying permits online through the Department website since 2011 and through the free MDC "MO Hunting" mobile app since 2014. The MO Hunting app has been uploaded to more than 348,000 mobile devices. Retail stores, convenience stores, and other places that sell permits transitioned to an online system in March 2016. There are no processing fees when permits are purchased either directly online or from a permit seller. People can buy Missouri hunting, fishing, and trapping permits all around the state at many gas stations, convenience stores, sporting-goods stores, large retail stores, and other vendors, and at many Department offices and all Conservation Nature Centers. People can also buy permits directly online from the Department website at mdc.mo.gov/buypermits and from their smartphones through the free "MO Hunting" mobile app. One popular and convenient feature of the app is that no paper permits are needed. The app lets users upload electronic copies of all their permits to the mobile device to show as needed. People can also buy permits over the phone by calling 800-392-4115, using a credit card, paying a \$1 fee, and waiting a week for permits to arrive by mail. Permit sales account for about 18 percent of Department revenue and support a wide range of conservation activities around the state. The Department has a Conservation Permit Card, which looks like a credit card, to provide a durable alternative to paper or electronic permits. The permit costs \$2 and does not expire.

Conservation Volunteers. Volunteers are important Department partners. Volunteer highlights include the over 850 Hunter Education volunteer instructors that contribute more than 14,000 hours of classes, certifying over 24,000 students; the 4,435 Stream Teams that conduct water quality monitoring, remove trash, plant trees, and stencil storm drains; the 12 community based Master Naturalist chapters that contribute more than 68,500 hours in conservation projects; the 52,000 hours of time contributed by nature center, interpretive center, and shooting range volunteers; over 3,900 hours of time from 122 protection volunteers; the more than 2,700 individuals, groups, and organizations that are involved in the Missouri Forestkeepers Network; and the Discover Nature Fishing volunteers that offered more than 270 classes.

Comprehensive Conservation Strategy. Conservation agencies will only meet future fish and wildlife commitments to the public within a system of healthy habitats. The Department is being proactive with habitat and species conservation programs by integrating the conservation priorities of our agency and conservation partners into a network of lands and waters. Missouri is currently coordinating with the Gulf Coastal Plain and Ozark Highland Landscape Conservation Cooperative and University of Missouri on the creation of a Landscape Health Index (LHI). The creation of a LHI allows users to assess if conservation management actions are successfully creating resilient landscapes of natural communities and associated species assemblages.

Chronic Wasting Disease. Chronic wasting disease (CWD) is a deadly deer disease that has been found in northeast, west-central, central, and east-central Missouri. In the fall of 2017, the Department conducted increased CWD-sampling in 25 of the 41 CWD management zone counties. The Department required hunters to present their deer for CWD sampling at a Department sampling location if the deer was harvested in one of the 25 counties during the opening weekend of the fall firearms deer season, November 11 and 12. Over 800 Department employees assisted in the two-day sampling effort. The sampling was free and hunters could find test results later through an online system. The Department also continued to work with meat processors and taxidermists throughout much of the state to provide free CWD sampling during other parts of the deer-hunting seasons. Through the 2017-2018 sampling effort, more than 24,500 deer were tested. Thirty-three new cases of the disease were detected, three in Adair, one in Cedar, four in Franklin, one in Jefferson, seven in Linn, three in Macon, one in Perry, three in Polk, four in St. Clair, and six in Ste. Genevieve counties. For the 2018 deer season, the Department will expand the CWD management zone from 41 to 48 counties. Mandatory sampling will be required in 31 management zone counties during the first two days of the fall, 2018 firearms deer season. The Department has sampled more than 100,000 deer since sampling began in 2001. The total number of free-ranging deer confirmed to have CWD is 75.

Science-based Conservation. The Department uses a science-based approach to manage fish, forests, and wildlife and research projects are one of the ways the Department obtains information for decision-making. For example, the Department is conducting a five-year wild turkey research project to monitor populations in several counties across the state. This research includes banding and putting radio transmitters on wild turkeys to determine gobbler and hen survival. More than 580 turkeys have been captured, banded, and released. The research will also determine what proportion of the banded wild turkey population is harvested by hunters. Another research effort involves efforts to propagate and restore the Ozark and eastern Hellbender. The Department has partnered with the Saint Louis Zoo to conduct captive breeding. At the zoo, 4,000 larval and juvenile hellbenders have been reared and will be released in their native Ozark rivers. The Department is also monitoring black bears. Since 2010, Department staff have marked over 150 individual bears for research purposes and staff are currently monitoring 24 collared bears. Additional research efforts include harvest and attitude surveys, pallid sturgeon sampling, and the long-term, landscape scale, Missouri Ozark Forest Ecosystem Project.

Eliminating Feral Hogs in Missouri. The Department continues to work with partners and landowners to eliminate feral hogs from the landscape. Following the experiences of other

states and through monitoring trends in Missouri, the Department has eliminated hunting for hogs on Department areas, since hunting has not been demonstrated to help to eradicate hogs. Other partners have similar bans for their properties, including the U.S. Army Corps of Engineers (St. Louis, Kansas City, and Little Rock districts), Missouri Department of Natural Resources, and the L-A-D Foundation. Fort Leonard Wood and Mingo National Wildlife Refuge only allow incidental take of feral hogs while deer hunting. In 2015, the Department changed its messaging to the public from “shoot on sight” to “Report - Don’t Shoot Feral Hogs.” The Department and other partners have increased feral hog elimination efforts this year through trapping. Last year, the Department and partners removed over 6,500 feral hogs from Missouri’s landscape and have already eliminated over 3,100 in the current year. The Department signed a \$1.865 million Cooperative Agreement with USDA-Wildlife Services to support full-time feral hog trappers and provide them with equipment for statewide feral hog elimination efforts.

Helping Children and Families Discover Nature. Helping children and families discover nature is a key part of the Department’s mission. Last year, the Department held eight Discover Nature Girls Camps for girls ages 11–15 to get young women excited about the outdoors. Camp classes included hunter education, archery, canoeing, fishing, tree-stand safety, and Dutch oven cooking. The Department’s Discover Nature Schools conservation education curriculum, which is used in 99 percent of Missouri school districts for grades pre-K through 12, helps teachers engage students with hands-on, outdoor learning. In addition, the Discover Nature Fishing program helps children and families have fun in the outdoors by learning to fish.

Archery in the Schools Program Builds Champions. The Department provides Missouri National Archery in the Schools Program (MoNASP) grants to schools for equipment, as well as free teacher and staff training for those administering the program. More than 190,000 Missouri students from 675 schools participate in MoNASP. The MoNASP program promotes education, self-esteem, and physical activity for kids in grades four to 12. This year more than 3,200 youth participated in the two-day MoNASP State Tournament sponsored by the Missouri Conservation Heritage Foundation.

Technical Assistance for Landowners. The Department’s Private Land Services Division continues to provide Missouri landowners with technical assistance and coordination that benefits fish, forest, and wildlife conservation. The Division, with 74 full-time positions, had over 37,000 contacts last year and helped landowners with \$1.8 million in funding for conservation practices and program cost-shares. Private Land Services has also implemented a Missouri Outdoor Recreational Access Program statewide to enhance habitat management and public access to outdoor recreation opportunities. Currently, 60 landowners have signed agreements to provide recreational access on 14,800 acres.

Helping Communities One Tree at a Time. The Department awarded \$382,914 to 35 Missouri communities through its Tree Resource Improvement and Maintenance (TRIM) grant program. TRIM grants offer cost-share funding for government agencies, public schools, and

nonprofit groups to manage, improve, or conserve trees on public lands. TRIM grants help recipients accomplish activities that keep their neighborhood trees healthy and thriving, including inventory, pruning, planting, and educational programs. The Department also awarded \$361,564 in grants to 169 rural fire departments for the purchase of wildfire equipment.

Shooting Range Renovations. The Department completed construction of a new, state-of-the-art staffed shooting facility at Busch Shooting Range in St. Charles. The new range incorporates the most current national shooting range design standards, including numerous improvements for user convenience, safety, and reduced waiting times. Originally built in 1975, the Busch range sees more than 40,000 shooters annually. The Department has five staffed ranges and 70 unstaffed ranges throughout the state.

Missourians for Monarchs Collaborative. The Department is working with more than 30 conservation and agricultural organizations, state and federal agencies, and utilities, agribusinesses and cooperatives to develop a collaborative monarch and pollinator conservation plan for Missouri. The Missourians for Monarchs collaborative has representatives from agribusiness, conservation organizations, academia, state and federal agencies, volunteer organizations, and agriculture organizations with a goal of establishing more than 19,000 acres of pollinator habitat per year.

Rod and Reel Loaner Program. The Department makes fishing more accessible through the Rod and Reel Loaner Program, which is available in 116 locations across the state. People can check out fishing poles and tackle boxes for free at participating sites, including public libraries. The fishing poles are equipped with standard spin-cast reels. The tackle boxes are supplied with hooks, sinkers, and bobbers for basic fishing opportunities.

National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Department staff serve on the National Technical Workgroup for the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. The 2016 survey for the 50 states has included a new contracted approach to reduce costs and increase the reliability of results. The national results continue to be conducted by the U.S. Census Bureau. The survey is the best source for participation information and economic impacts from fishing, hunting, and wildlife-viewing and these results are used by the Department to highlight the importance, value, and economic impact of fish, forests, and wildlife for Missourians.

Flood-damaged River Accesses. The Department continued evaluating and repairing river and stream accesses damaged by 2017 spring flooding. Most flood damage occurred to Department accesses in the Ozarks on the Current River, North Fork of the White River, and the Gasconade River. Most accesses were repaired by the end of the summer, but some remained closed due to extensive damage.

Nebraska

NEBRASKA
STATE REPORT
May 25, 2018

Jim Douglas, Director
Nebraska Game and Parks Commission
2200 N. 33rd Street, Lincoln, NE 68503

The Nebraska Game and Parks Commission, along with our fellow state agencies and residents across the state, celebrated Nebraska's 150th anniversary in 2017. This milestone provided an opportunity to look back at what we have achieved since the first iteration of the Commission established in 1879. It was gratifying to see that while our methods have greatly evolved, our dedication to stewardship of the state's parks, wildlife and wild places has not wavered.

2017 also was a year in which we took steps to ensure our agency continues to meet the evolving needs of the resources we manage and the citizens we serve. In recognition of the need for more nature-based learning opportunities in our park system, we renovated and expanded the nature center at Wildcat Hills State Recreation Area, began construction on a renovated aquarium and nature center at Schramm State Recreation Area, and built an interactive creek at Platter River State Park. Our park visitors also benefitted from more organized activities such as guided nature hikes, birding events and naturalist presentations, among many others. We know that many park visitors seek more guidance in experiencing the outdoors, and we're working diligently to provide that.

Significant budget cuts and inflationary pressures necessitated that we raise prices on some permits for the first time in eight years. This will enable us to continue the research, habitat work and stewardship needed to maintain our quality hunting and fishing opportunities and beautiful state parks. We employ sound financial management practices and are confident that this approach, along with our highly dedicated staff, will continue to serve the public well.

A curious, conservation-minded and engaged citizenry will be crucial to ensuring that our wildlife and wild places are valued in the future. With that in mind, we have worked hard to reach Nebraska's youth. Curriculum programs such as Project Wild and Trout in the Classroom teach students about ecosystems, life cycles and habitat, and are used currently in hundreds of classrooms statewide. Thousands of students attend our Outdoor Discovery Programs that introduce them to outdoor activities such as archery and kayaking. Lincoln Public Schools have begun incorporating the Growing up Wild curriculum, designed for younger students, into science curriculum of all kindergarten, first- and second-grade classrooms in the district. After-school outdoor education programs are offered at hundreds of community learning centers and schools across the state.

Our work with youth, new opportunities in our parks, and our great hunting and fishing opportunities make me optimistic that our future is one in which Nebraska is forever home to diverse wildlife, healthy habitat, natural beauty and endless opportunities for those who choose to spend time outdoors.

WILDLIFE VIOLATOR COMPACT- In the fall of 2017, Nebraska became the 46th state to join the Interstate Wildlife Violator Compact. This agreement allows member states to exchange information and honor the revocation of hunting, fishing and trapping privileges.

NEW AND IMPROVED PERMIT SALES SYSTEM- After more than a decade of use, the agency's online permit sales system received a major upgrade to improve the public's experience and ensure continual compliance with the latest Payment Card Industry Data Security Standards. The revamped site, which launched in September, offers the following functions:

- Information about each type of permit, including accompanying stamp requirements, unit maps, Telecheck instructions, and links to guides and Harvest Information Program registration;
- The ability to search and sort remaining big game permits;
- An updated profile section, where users can view their permit purchase history, view or reprint eligible permits, see draw application statuses and preference and bonus points, manage land owner information, look up their hunter education number and update their personal information;
- The ability to create a Friends and Family List, which will allow users to purchase permits as gifts without reentering their information;
- The ability to purchase NEBRASKAland Magazine or make a donation to the Wildlife Conservation Fund and Hunters Helping the Hungry;
- A special section for senior and veteran permits for easy renewal.

THE BEST TURKEY HUNTING OPPORTUNITIES IN THE NATION-On April 2, 2018, Gov. Pete Ricketts again proclaimed Nebraska the best turkey-hunting destination in the United States. His proclamation cited turkey abundance, youth-friendly regulations and permit prices, permit availability, and season lengths as factors why nearly 90 percent of turkey hunters are satisfied with their Nebraska turkey hunting experiences.

NEBRASKA MOUNTAIN LION MANAGEMENT PLAN-The Nebraska Mountain Lion Management Plan, approved by the Commission in October, will guide management decisions based on our agency mission. The plan's overall goal is to maintain resilient, healthy, and socially acceptable mountain lion populations that are in balance with available habitat and other wildlife species over the long term. Game and Parks recognizes mountain lions are an important component of Nebraska's native biodiversity that have intrinsic value, as well as recreational value to hunters and non-consumptive users. We will monitor mountain lion populations through ongoing research and use regulated harvest as a primary strategy for meeting management goals and objectives when possible. The plan provides guidance for any management decisions regarding future harvest seasons, which are now being considered with the latest population estimates of 59 lions for the Pine Ridge area being much higher than previous estimates.

NEBRASKA'S QUAIL POPULATION CONTINUES TO BOOM- Bobwhite quail have continued to increase throughout Nebraska in recent years, providing excellent mixed-bag opportunities for upland hunters. Summer 2017 quail surveys showed additional increases and harvest is expected to increase again in 2018. Several factors have contributed to Nebraska's rising bobwhite quail population. First, much of the primary quail range experienced another relatively mild winter and other severe weather events were isolated. Despite continued land-use change and habitat fragmentation, bobwhite populations have remained very strong in areas of Nebraska where their key habitat elements remain.

TESTING FOR CHRONIC WASTING DISEASE-Chronic wasting disease (CWD) is prion disease that attacks the brain of an infected deer, elk or moose. CWD, which is always fatal to the infected animal, has now been detected in 40 counties across the state. Game and Parks is working around the state primarily testing hunter-harvested deer for CWD. In 2017, sampling in

the southwest and western parts of the state resulted in new detections in five counties in southwest Nebraska, with increasing CWD prevalence in both the southwest and west districts.

FORTENBERRY CO-INTRODUCES THE RECOVERING AMERICA'S WILDLIFE ACT- Congress took a step to address the critical need for wildlife conservation in December. U.S. House Reps. Jeff Fortenberry (R-Neb.) and Debbie Dingell (D-Mich.) introduced a bill to fund state wildlife conservation using existing mineral and energy royalties from federal lands. The Recovering America's Wildlife Act, if passed, would invest in proactive, voluntary, incentive-based habitat conservation projects with private landowners by implementing Nebraska's State Wildlife Action Plan, called the Nebraska Natural Legacy Project. Game and Parks is working closely with Congressman Fortenberry, the Alliance for America's Fish and Wildlife, AFWA, and many other agencies and organizations to help advance this important legislation.

ASSESSMENT OF HUNTERS, ANGLERS AND PUBLIC ACCESS- To ensure future participation in hunting and fishing in Nebraska, we need to understand how hunters and anglers use Nebraska's fish and wildlife resources, how they perceive outdoor opportunities, and what kinds of activities they are participating in.

- **Understanding Buyer Behavior** – The agency partnered with the University of Nebraska-Lincoln to better understand customer purchase trends by activity, age groups, gender and more. The research will be used to identify opportunities to positively impact recruitment and retention of hunters and anglers.
- **Improving Hunting Access** – We also joined the Nebraska Cooperative Fish and Wildlife Unit to conduct more than 3,500 hunter surveys on 600 sites to gauge participation on public land and private lands enrolled in the Open Fields and Waters Program. Over a three-year period, hunters were surveyed about relative use, satisfaction and harvest rates. The surveys showed that management and placement of access appears to affect people's participation and overall satisfaction. Insights gained from the surveys will be used to improve access and opportunities.

GIS TEAM WINS INTERNATIONAL AWARD-The Game and Parks GIS team's advanced use of technology earned it international recognition in 2017 receiving the ESRI Special Achievement in GIS Award. Game and Parks was one of only 180 organizations selected from more than 300,000 eligible candidates around the world. The award recognized the team's online open data portal, which provides authoritative GIS data to the public in a variety of formats. The Enterprise GIS system manages datasets in a central location, promotes collaboration, and provides a platform that citizens, agencies, and organizations can access in order to build maps, create apps and view geospatial data.

STREAMLINING ENVIRONMENTAL REVIEWS AND CONSERVATION PLANNING- Game and Parks launched the online, interactive Conservation and Environmental Review Tool (CERT) for staff and partners to conduct environmental reviews and assist in conservation planning efforts. This tool provides conservation information on biological diversity, protected lands and other natural resources. People who use this tool for conservation planning can look at projects in a broader picture to understand the opportunities and ideal locations to focus conservation measures that will be most beneficial to the natural resources. It also affords consultants, partners and staff the ability to submit proposed projects for review of potential impacts to threatened, endangered and species of concern. This tool updates the agency and U.S.

Fish and Wildlife Service environmental review process, which will reduce the time waiting to receive an environmental review. People who use the tool can submit project information online and will receive an environmental review report within about 10 minutes.

SCHOLASTIC SHOOTING GOING STRONG- The National Archery in the Schools Program in Nebraska saw another record year with 285 Nebraska schools participating in the program, reaching 35,000 kids. The 2018 Cornhusker Trapshoot brought over 2,500 youth shooters together for this annual event that draws a crowd of several thousand youth, parents, coaches and families and is a tradition for many in Nebraska.

REACHING MORE CONSTITUENTS THROUGH SOCIAL MEDIA-Game and Parks grew its social media reach in 2017. At the end of the year, the agency's Facebook page had approximately 83,000 followers (gain of 20,000 in the past year), as well as nearly 11,000 Instagram followers and nearly 22,000 Twitter followers. The agency used these channels to share information about Nebraska game and non-game species, news releases, places to hunt and fish, and park areas, among other topics.

Game and Parks greatly expanded its use of video to share information during 2017. Video tours of park areas were extremely popular, as were videos about August's solar eclipse, hunting opportunities, the Cowboy Trail and the development of a new recreational lake in Omaha. Game and Parks also began regularly answering questions from social media followers in real time via several Facebook Live videos, including fishing, fish stocking, paddling, turkey hunting and deer hunting topics.

INCREASING PUBLIC ACCESS OPPORTUNITIES- The Open Fields and Waters (OFW) Program provides hunting, trapping and fishing access to private lands in Nebraska. In 2017-18, Game and Parks enrolled more than 254,000 acres of land and 42 miles of streams into the OFW Program, a gain of >20,000 acres over the previous year. Of the total land acres enrolled, 72 percent consisted of Conservation Reserve Program (CRP) lands and other grassland habitat. Other habitat types enrolled include woodlands (7 percent), cropland (11), tall wheat and milo stubble (10), and wetlands/ponds (1).

The approval of the Berggren Plan for pheasants in 2016 emphasized increasing public hunting opportunities within eight priority areas. In 2017-18, OFW acres were increased by nearly 26,000 acres in the Focus on Pheasant and Pheasant Opportunity Areas.

PROJECT WILD BRINGS CONSERVATION EDUCATION TO SCHOOLS- Project WILD is a national conservation education program administered by Game and Parks. Through educator workshops, Project WILD, Aquatic WILD and its early childhood counterpart Growing Up WILD, we train teachers to incorporate conservation and wildlife education into their classrooms. We provide Nebraska-specific curriculum and education materials for students in Pre-Kindergarten through 12th grade. In 2017, we held 41 Project WILD workshops and trained 777 teachers across the state. Growing Up WILD was adopted and mandated for the K – 2nd grade science curriculum in Lincoln Public Schools, reaching 9,000 students annually. Additionally, we are working with the Department of Education to help the growing community of afterschool programs to include conservation and natural resources curriculum.

AQUATIC HABITAT STAMP BRINGS NEW LIFE TO AGING WATERS-Initiated in 1997, the Aquatic Habitat Stamp is required for anyone who wants to fish in Nebraska, providing funds dedicated to addressing habitat issues in reservoirs, natural lakes, rivers, streams and sand pits. Twenty years after its launch, the Aquatic Habitat Stamp has funded projects to rehabilitate aquatic habitat and improve angler access at 110 public water bodies across the state. Projects have included the removal of accumulated sediments; installation of sediment retention dikes; creation of wetland cells to treat incoming flows; restoration of eroded shorelines, renovations of fisheries; installation of ADA accessible fishing piers and boat launch facilities; and creation of underwater fish habitat features that improve fishing experiences. More than 71 funding partners have aided Game and Parks in these projects, expending over \$68 million to improve aquatic habitat. The Aquatic Habitat Program currently has 49 projects underway across the state.

NIOBRARA INSTREAM FLOW- In October 2017, the Nebraska Department of Natural Resources signed an order granting an application to appropriate water for the purpose of instream flows on the Niobrara River to maintain habitat for the fish community. The instream flow permit was granted to Game and Parks, Upper Niobrara White Natural Resources District (NRD), Middle Niobrara NRD, Lower Niobrara NRD, Upper Loup NRD and Upper Elkhorn NRD for flows on the Niobrara River between Spencer Dam and the confluence with the Missouri River. The appropriation was approved for seasonally adjusted flow amounts to coincide with the different life cycle stage needs of the river's fish species. The instream flows are part of the efforts by the project partners and the Nebraska Public Power District, to ensure the long-term sustainability of water in the Niobrara River basin for generations to come.

HYBRID BLUEGILL FOR URBAN FISHERIES- A new stocking program of hybrid bluegill for the urban fishing program got off to a great start in 2017. Staff created a cross between a bluegill and a green sunfish to create the hybrid bluegill, a cross that can occur naturally in the wild. These fish then were raised in hatcheries to a catchable size of an average of 7 inches before stocking into some of our heavily used urban ponds and lakes. The hybrid bluegill have proven to be easily caught by novice anglers and will provide for many opportunities for young anglers to experience the fun of a successful fishing trip.

AQUATIC INVASIVE SPECIES PREVENTION AND STATUS OF ZEBRA MUSSELS- The Nebraska Aquatic Invasive Species program completed 4,150 boater surveys and 3,841 watercraft inspections. The surveys collected data to monitor watercraft movements and prevalence of aquatic invasive species (AIS) prevention behavior among watercraft operators, and provided participants invasive species identification and prevention information.

Two watercraft decontaminations were conducted at fishing tournaments in 2017. Both watercraft that had previously traveled to places with known populations of zebra mussels. In one of those boats, zebra mussel shells were found in the live well before a tournament at Calamus Reservoir. The mussels appeared to be dead, and the boater was ticketed for possessing zebra mussels.

Zebra mussels have become established and are currently expanding in Lewis and Clark Lake and the stretch of the Missouri River downstream of Gavins Point Dam. The mussels are starting to have negative impacts on various water intake systems on these areas, especially several power plants. In 2017, an adult zebra mussel was found in Lake Yankton, which is located immediately below the Gavins Point Dam and drains into the Missouri River.

Zebra mussel veliger and adult sampling were conducted on all major water bodies across the state to monitor for the potential new mussel invasions. Carter and Zorinsky lakes in Omaha each had one positive sample for veligers in 2017. Both water bodies are considered suspect.

TROUT IN THE CLASSROOM- Trout in the Classroom (TIC) is a curriculum program that provides students the opportunity to learn about aquatic resources within a framework of hatching and raising rainbow trout. Participating classrooms are provided a cold-water aquarium system and rainbow trout eggs. Students monitor growth as their trout hatch and develop, and they take ownership of caring for the trout by feeding, testing water quality and cleaning the aquarium. The program increased the number of schools participating in 2016 by 24 schools. The total number of TIC schools was 57 for the 2016/2017 academic year.

CONSERVATION OFFICERS WEAR MANY HATS - When fires broke out at near Lake McConaughy in March, Conservation Officer Bryce Streger immediately began assisting with evacuations, even though his residence was in the path of the fire. Streger arrived at one home in time to help an elderly man – a double amputee – to his car. As the man’s wife went back in the house to retrieve a prized possession, Streger noticed the flames moving closer, immediately ran into the house helping the woman to her car, and the couple escaped to safety. Streger lost everything he owned in this fire, which destroyed eight homes and damaged 800 acres, but he and his dog were unharmed. With Streger’s help, others in the fire’s path made it to safety, too.

Nebraska’s conservation officers enforce the state’s hunting and fishing laws, and also help maintain public safety at state parks and recreation areas. Annually, the Nebraska Game and Parks Commission sells more than 900,000 permits, licenses and stamps, and each permit sold represents a possible need for intervention by a conservation officer. Over the past 20 years, the top two citations given by conservation officers have been for failure to purchase a state park permit and hunting, fishing and harvest fur without the required permit. Conservation officers also patrol more than 300,000 acres of land as well as miles and miles of rivers and streams across the state.

But conservation officers do so much more than enforce fish and game laws and patrol public land. They help with fish and wildlife survey work, investigate fish kills and wildlife damage complaints, and work with landowners interested in enrolling their land in the Open Fields and Waters public access program. Many are trained as boater or hunter education instructors, or give presentations about wildlife to elementary and high school students. And as law enforcement officers, conservation officers respond to emergency situations – such as fires – in the communities where they live.

BOATING SAFETY AND EDUCATION

Game and Parks began offering an online boater education course in June of 2017. The course (available at OutdoorNebraska.org/boatereducation) allows students to take the course wherever and whenever is convenient for them. Classroom boater education courses still are offered across the state for those who prefer to learn in a more traditional setting. Anyone born after Dec. 31, 1985, is required to successfully complete a boater education class and possess a course certificate while operating a boat or personal watercraft. In 2017, 2,948 students successfully completed boater education. More than a thousand of these were completed online. Boater registrations increased in 2017 to more than 87,000 vessels. There were 31 boating accidents reported in 2017 involving 44 different vessels with 13 injuries and three related fatalities.

North Dakota

**NORTH DAKOTA
STATE REPORT**
June 2018

Terry Steinwand, Director
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501

Deer Season Set

North Dakota's 2018 deer season is set with 55,150 licenses available to hunters this fall, 650 more than last year.

In total, antlered mule deer licenses increased by 150 from last year, antlerless mule deer by 550, antlered whitetail by 150 and antlerless whitetail by 150. Any antlered licenses decreased by 100 and any antlerless decreased by 250.

As in the past several years, there are no mule deer doe licenses available in unit 4A.

Spring Mule Deer Survey

The North Dakota Game and Fish Department completed its annual spring mule deer survey in April, and results indicate western North Dakota's mule deer population is similar to last year, and 45 percent above the long-term average.

Biologists counted 2,540 mule deer in 245.8 square miles during this year's survey. Overall mule deer density in the badlands was 10.3 deer per square mile.

Big game management supervisor Bruce Stillings said mule deer in the badlands have recovered nicely following the winters of 2009-11, which led to record low fawn production and a population index low of 4.6 mule deer per square mile in 2012.

Two Deer Test Positive for CWD

A whitetail buck and a mule deer doe, taken during the 2017 deer gun season from unit 3F2 in southwestern North Dakota, have tested positive for chronic wasting disease.

Since 2009, the total now stands at 11 deer to test positive for CWD in North Dakota, and all were from within unit 3F2.

In 2010, the Game and Fish Department implemented special regulations in 3F2 and surrounding units to limit the natural spread of the disease, and to protect the rest of the deer, elk and moose herds in North Dakota.

In addition to the 350 samples tested for CWD from unit 3F2, another 1,050 were tested from deer harvested last fall by hunters in the central third of the state, and from any moose or elk taken during the hunting season. In all, more than 1,400 samples were tested.

Since the Game and Fish Department's sampling efforts began in 2002, more than 31,000 deer, elk and moose have tested negative for CWD.

2017 Deer Season Summarized

A total of 49,407 North Dakota deer hunters took approximately 30,100 deer during the 2017 deer gun hunting season.

Game and Fish made available 54,500 deer gun licenses last year. Overall hunter success was 61 percent, with each hunter spending an average of 4.4 days in the field.

Hunter success for antlered white-tailed deer was 66 percent, and antlerless whitetail was 61 percent.

Mule deer buck success was 83 percent, and antlerless mule deer was 86 percent.

Hunters with any-antlered or any-antlerless licenses generally harvest white-tailed deer, as these licenses are predominantly in units with mostly whitetails. Buck hunters had a success rate of 63 percent, while doe hunters had a success rate of 60 percent.

Game and Fish issued 13,402 gratis licenses in 2017, and 11,503 hunters harvested 6,059 deer, for a success rate of 53 percent.

A total of 1,022 muzzleloader licenses were issued in 2017, and 933 hunters harvested 354 white-tailed deer (196 antlered, 158 antlerless). Hunter success was 38 percent.

A record 28,481 archery licenses (26,114 resident, 2,367 nonresident) were issued in 2017. In total, 23,003 bow hunters harvested 8,900 deer (7,854 whitetails, 1046 mule deer), for a success rate of 39 percent.

Pronghorn Hunters Successful

Hunter success during last fall's pronghorn hunting season was 75 percent, according to statistics provided by the North Dakota Game and Fish Department.

Game and Fish issued 410 licenses (255 lottery and 155 gratis), and 366 hunters took 275 pronghorn, consisting of 264 bucks, 10 does and one fawn. Each hunter spent an average of 2.4 days afield.

Three percent of the harvest occurred during the archery-only portion of the season.

The 2018 pronghorn hunting season will be determined in July.

2017 Bighorn Sheep, Moose and Elk Harvests

Harvest statistics released by the North Dakota Game and Fish Department show overall hunter success during the 2017 season for bighorn sheep was 100 percent, 92 percent for moose and 58 percent for elk.

The department issued four bighorn sheep licenses and auctioned one. All five hunters harvested a bighorn ram.

The department issued 245 moose licenses last year. Of that total, 240 hunters harvested 221 animals – 138 bulls and 83 cows/calves.

The department issued 400 elk licenses last year. Of that total, 362 hunters harvested 211 elk – 112 bulls and 99 cows/calves.

NASP State Tournament Results

While a spring snowstorm kept some of the record 750 registrants from attending, 600 archers did compete in the North Dakota National Archery in the Schools Program state bull's-eye tournament in Minot March 23-24.

Oakes students claimed top honors in the elementary (grades 4-6) and middle school (grades 7-8) divisions, while Hankinson received the top prize in the high school (grades 9-12) division.

The overall male winner was Hankinson archer Cheyne Meyer, while Medina student Gracie Gunderson claimed the top spot in the female division.

Winning teams and the top 10 individuals qualify for the national tournament, scheduled for May in Louisville, Ky. The Game and Fish Department and North Dakota Youth Archery Advisory Council contribute a total of \$3,000 in travel assistance to the first place team in each division, and \$1,000 to the overall male and female individual winners. In addition, a total of \$20,000 in college scholarships was awarded by the NDYAAC to the top five overall scorers in both boys and girls divisions.

North Dakota Earth Day Patch Contest

The state Game and Fish Department's annual Earth Day awareness campaign is accepting entries for design of a 2018 Earth Day patch. North Dakota students ages 6-18 are eligible to participate.

The Game and Fish Department will announce a winner in three age categories – 6-9, 10-13, and 14-18. Each winner will receive a pair of binoculars. The final patch design will be chosen from the three winners.

The winning design will be used on a patch given to members of Girl Scouts, Boy Scouts, 4-H clubs and any school participating in Earth Day cleanup projects on state-owned or managed lands in North Dakota in April and May.

Bighorn Sheep Population Declines

The North Dakota Game and Fish Department's 2017 bighorn sheep survey, completed by recounting lambs in March, revealed a minimum of 265 bighorn sheep in western North Dakota, down 11 percent from 2016 and 9 percent below the five-year average.

Altogether, biologists counted 91 rams, 149 ewes and 25 lambs. Not included are approximately 20 bighorns in the North Unit of Theodore Roosevelt National Park. The survey count was the lowest since 2006.

The decline in the 2017 count reflects the spread of bacterial pneumonia to three previously unaffected herds and consequently the adult and lamb mortalities that followed.

The northern badlands population declined 10 percent from 2016, and the southern badlands population was down 21 percent.

Game and Fish Department biologists count and classify all bighorn sheep in late summer, and then recount lambs the following March, as they approach one year of age, to determine recruitment.

Scholarships Available for Students

The North Dakota Game Wardens Association, Ray Goetz Memorial Fund and Kupper Chevrolet are providing scholarships to a graduating high school senior or current higher education student, majoring in fisheries, wildlife management or law enforcement.

Applicants must be North Dakota residents, and have maintained a 3.25 grade point average. Scholarships will be awarded this fall upon proof of enrollment.

Game and Fish Pays \$621,000 in Property Taxes

The North Dakota Game and Fish Department recently paid more than \$621,000 in taxes to counties in which the department owns or leases land. The 2017 in-lieu-of-tax payments are the same as property taxes paid by private landowners.

The Game and Fish Department manages more than 200,000 acres for wildlife habitat and public hunting in 51 counties. The department does not own or manage any land in Traill or Renville counties.

Nonresident Any-Deer Bow Licenses

The North Dakota Game and Fish Department will have 502 any-deer bow licenses available to nonresidents in 2018.

The number of nonresident any-deer bow licenses available is 15 percent of the previous year's mule deer gun license allocation. The Game and Fish Department issued 3,350 mule deer licenses in the 2017 deer gun license lottery.

Grants Support High School Trap League

The North Dakota Game and Fish Department is launching a program that will provide grants to local clubs or communities that offer high school trap shooting.

Game and Fish education section leader Marty Egeland said the grants are designed to support the North Dakota high school trap league.

“The grants are to be used for the infrastructure to support youth shooting, for example trap throwers, trap houses, sidewalks and voice pulls,” Egeland said.

Interested applicants can print out the range grant application online at the Game and Fish website, gf.nd.gov.

Spring Turkey Season Set

The North Dakota Game and Fish Department is offering 5,655 wild turkey licenses for the spring hunting season, 30 fewer than last year.

Four of the 22 hunting units have more spring licenses than in 2017, eight have fewer and nine remain the same. Unit 21 (Hettinger and Adams counties) is again closed in 2018 due to lack of turkeys in the unit.

First-time spring turkey hunters ages 15 or younger are eligible to receive one spring license valid for the regular hunting season in a specific unit. To be eligible, the youth hunter must be 15 or younger on opening day of spring turkey season, and have never received a spring turkey license in North Dakota.

Game and Fish Violations Tallied for 2017

While game and fish violations were up in 2017, the number of citations has remained relatively consistent in North Dakota from year to year.

Robert Timian, chief of enforcement for the state Game and Fish Department, said there are three basic causes of violations – intentional disregard of the rules, lack of knowledge of the rules and just simply mistakes.

“Violations due to lack of knowledge can easily be addressed by taking the time to read through the regulations,” Timian said. “Mistakes can be reduced by taking a little more care and time.”

Wardens check thousands of hunters and anglers each year, and Timian said the majority are law-abiding citizens.

Game wardens issued more than 2,500 citations in 2017, compared to nearly 2,300 in 2016 and 2,400 in 2015.

“There are some factors why violations were up in 2017,” Timian said. “For one, we had a full warden staff for the entire year, in addition to one temporary position, and another reason was all of our wardens at one time or another during the 2016 fall hunting seasons and into 2017 were assisting with efforts at the pipeline protest.”

The same violations occur at or near the top of the list every year, Timian said, such as failure to have a license, and boating/fishing without the proper number of life jackets. But he emphasized there is one area of violation that has increased every year.

Ohio

OHIO
STATE REPORT
May 1, 2018

Michael R. Miller, Chief
Ohio Division of Wildlife
2045 Morse Rd., Bldg. G
Columbus, OH 43229

STEWARDSHIP

STEWARDSHIP ACCOMPLISHMENTS FOR 2017

- Continued enforcement and inspections relating to invasive aquatic species.
- Coordinated a multi-agency planned action to further our understanding of grass carp distribution and abundance in the Sandusky River and Sandusky Bay in August of 2017. State, federal, university and provincial partners spent two days collecting a total of 8 grass carp. Additionally, weekly sampling events from late May through early August were used to evaluate the efficiency of catching grass carp in the Sandusky River with electroshocking.
- Developed a new policy for the determination of injurious aquatic invasive species in Ohio that formalizes the process the Division will use to assess risk of invasion from non-native aquatic species and prevent introduction of those species that may pose a risk.
- Used Great Lakes Restoration Initiative grant funding to isolate water and potential invasive species transfer between the Lake Erie and Ohio River Basins through completion of infrastructure improvements at St. Marys State Fish Hatchery.
- Expanded knowledge of trophy blue and flathead catfish movement in the Ohio River through a tagging study to improve management and regulations of this important trophy fishery. Biologists have implanted acoustic telemetry tags in trophy-size (>25 inches) blue and flathead catfish in the Meidahl Pool, Ohio River to document inter-pool movement and evaluate habitat used of these fishes in the Ohio River. Preliminary fish tracking results suggest that both species can travel relatively long distances in short periods of time and blue catfish move upstream and downstream between pools. The study will provide insights about management regulation of trophy catfish in this inter-jurisdictional fishery.
- Conducted Chronic Wasting Disease (CWD) roadkill sampling statewide and in the Disease Surveillance Area (DSA) in Holmes County, division staff in partnership with the Wildlife Management Institute, have collected more than 1,200 hunter harvested samples to be tested for CWD from the DSA during the 2016-17 and 2017-18 deer seasons.
- The state endangered and threatened species list was updated. Changes included adding the rusty patched bumble bee. In addition, activities to conserve state-listed species were conducted; improving nesting habitat for common terns; conducting surveys for massasauga; and captive rearing of Karner blue butterflies and plains gartersnakes.
- Conducted Bovine Tuberculosis (Tb) sampling in deer in Hamilton and Preble counties following the discovery of Tb in cattle herds and a wild white-tailed deer in an adjacent county in Indiana. Division staff collected more than 175 hunter harvested samples that tested negative for Tb during the 2016-17 deer season.
- In partnership with the Ohio Pollinator Habitat Initiative a statewide milkweed pod collection was conducted. Division Private Lands Biologists were instrumental in the transportation of

Pods from County Soil & Water Conservation Districts to various prisons across the state for pod and seed processing. Over 2,500 gallons of pods were collected in each of the past 2 years.

- Statewide habitat management activities on public lands included: 5,855 acres of grassland habitat management (1,204 acres of burning, 4,080 acres of vegetation control, and 571 acres of establishment); 13,016 acres of wetland habitat management including establishment at Berlin (11 acres) and Mercer (36 acres) Wildlife Areas; and 32 acres of unique habitat management (e.g. oak openings, etc.).
- Repaired the class 2 dam at Pond 27 at Killdeer Plains to enhance waterfowl habitat and decommissioned several classified dams including Jockey Hollow Conservation Ponds 1 and 2 and Killdeer Plains Upground Reservoir in FY18.

STEWARDSHIP INITIATIVES FOR 2018

- Partnered with City of Fremont, USFWS, USACE, and Ohio EPA to facilitate notching and reduction in water level at the Ballville Dam which will allow for removal in Fall 2018.
- Develop a web-based fishing tournament scheduling and reporting system in partnership with Parks & Watercraft to allow one-stop registration, report tournament results, and allow boaters to determine potential ramp use/congestion prior to visitation.
- Complete the new *Fishes of Ohio* guide in time for Christmas 2018 through a partnership with The Ohio State University and Ohio Biological Survey that targets both casual and avid fish enthusiasts.
- Reintroduce the rare and endangered wetland and glacial lake oriented Iowa Darter, Blacknose Shiner, and Lake Chubsucker fishes through collaborative production and stocking efforts with The Ohio State University.
- Protect Ohio's Aquatic Resources in Ohio with appropriate inspections and enforcement.
- Complete a 10-year deer management plan based off recommendations of the deer stakeholder committee workshops completed in 2018.
- Continue to pursue partnership projects that are 100% reimbursable to improve wildlife habitat and maximize use of Federal Aid in Wildlife Restoration funds. Partners include Ducks Unlimited, the National Wild Turkey Federation, Pheasants Forever/Quail Forever, and the Nature Conservancy among others.
- Cooperate with Ohio University to develop a population estimate for bobcats and model the effects of a conservation trapping season on bobcat population growth and expansion in southeastern Ohio.
- Develop management plans, conduct forest inventories, and implement forest habitat management projects on wildlife areas in Districts 3, 4, and 5 to create early successional habitat.
- Continue to develop Monarch/pollinator habitat via the Ohio Pollinator Habitat Initiative (OPHI) with non-traditional partners such as ODOT, AEP, First Energy, golf courses, county and state parks, and Marathon Petroleum.
- Seek partnerships to provide matching funds for the Lake Erie and Scioto Conservation Reserve Enhancement Programs (CREP) to maintain wild pheasant populations and important grassland habitat. State match funds will be required for these CREP projects to continue.
- In conjunction with Association of Fish and Wildlife Agencies (AFWA), division staff will provide input into the 2018 Farm Bill conservation programs. Emphasis will be on

increasing the national cap for CRP acres from 24 million to 40 million and ensuring adequate funding for the Wetland Easement Program.

- Conduct deer population goal setting surveys with hunters and framers in 2018 to set deer management direction for the next 3 years.
- Hold a gamebird summit in fall 2018 to discuss management, research, surveys, and hunting regulations for bobwhite quail, ruffed grouse, ring-necked pheasants, and American woodcock with constituents.

OPPORTUNITIES

OPPORTUNITIES ACCOMPLISHMENTS FOR 2017

- Implemented a new hunter education curriculum, including a new on-line hunter education course for Ohio residents 12 years of age or older.
- Developed Learn-to-guide to be implemented by conservation clubs in 2018.
- Constructed new air gun, archery and fish house buildings at the Ohio State Fairgrounds. ~5,000 people shot at the air gun range during the 12 days of the fair.
- Entered into a 5-year agreement with Cardinal Shooting Center to allow public access for pistol/rifle shooting.
- AEP Acquisition – Submitted year-1 grant application to FWS
- State Fish Hatcheries produced over 65 million fish stocked in water areas across the state of Ohio during calendar year 2017. Nearly all production targets were met or exceeded for the 12 different species and various life stages requested by fisheries managers to promote fish opportunities statewide.
- Completed construction of new boat ramps at Berlin Lake, Grand Lake St. Marys and partnered with the Division of Parks and Watercraft on the Marysville Upground Reservoir as well as a major renovation to the ramp at Hargus Lake.
- Informed future fish stocking strategies through completion of research evaluating the success of Walleye and Saugeye stocked as fry and fingerlings in 18 reservoirs throughout Ohio. Results indicate that less expensive to raise fry stocking is effective at some, but not all reservoirs, and can result in very high numbers of fish in some years.
- Statewide wildlife recreation management activities on public lands included maintenance of 181 facilities: boundary maintenance was completed on 402 miles of boundary; 91 controlled hunts; 2,379 acres of food plots and dove fields; and 406 acres of forest openings.
- Restored 800 acres of wetland habitat at Howard Marsh in partnership with Toledo Metroparks, the National Oceanic and Atmospheric Administration (NOAA), and Ducks Unlimited (DU), and The Nature Conservancy (TNC).

OPPORTUNITIES INITIATIVES FOR 2018

- Develop iSportsman App and Hunter Access Program.
- Continued to work with partners to finalize the Maumee River Lake Sturgeon Restoration Plan.
- Fall young-of-year sturgeon will be stocked in the Maumee river in the fall of 2018 after formal approval from the Lake Erie committee was confirmed in 2017.
- Submit grant to FWS for year-2 AEP acquisition.

- Cooperate with Ohio State University to evaluate the current Cooperative Hunting, Fishing and Trapping Program to measure effectiveness, locations, and quality of habitat of the private land access program.

CONNECTIONS

CONNECTIONS ACCOMPLISHMENTS FOR 2017

- Surpassed 100,000 followers on the division's main Facebook page and 14,000 viewers on Instagram.
- Wild Ohio Magazine memberships (mailing) increased to more than 23,000 (and continues to grow). This is an increase of 53 percent from previous years.
- Hosted the 1st Annual Student Wildlife Symposium, over 60 in attendance.
- Implemented new species and sizes for Fish Ohio program and a new URL.
- Three wildlife officers were issued police bicycles for patrol work. The bikes allow officers to better engage citizens and be more efficient with enforcement efforts in many areas versus on foot or from the vehicle. The bikes were utilized in a variety of areas around the state and are an exciting new avenue for wildlife law enforcement and public relations.
- 764 permits inspected for the 2016 fiscal year. (LE)
- Collected fish tissue samples for collaborative work with OSU on a research project to assess microcystin toxin contaminant levels in Lake Erie sportfish.
- Convened an external stakeholder group to set the direction for deer management in Ohio for the next 10 years using a facilitated structured decision making process.
- Engaged stakeholders to complete the revision of the Nuisance Trapping Rules and submitted to Wildlife Council for approval in winter 2018. Stakeholders were engaged throughout the revision process.

CONNECTIONS INITIATIVES FOR 2018

- Align main magazine article with photo, video, and social media push.
- Develop a strategic plan for angler and public access to the Sandusky River with removal of the Ballville Dam in partnership with the City of Fremont and local communities and park systems.
- Conduct a Bass Angler summit in February 2018 to update bass anglers on fisheries management, the proposed new fishing tournaments registration and reporting system, and discuss angler interests/concerns.
- Worked with interagency partners and the Michigan State University Quantitative Fisheries Center through the Lake Erie Perch Management Action Group (LEPMAG) process to make progress towards completing a yellow perch management strategy evaluation that will result in new harvest policies in each Lake Erie management unit for inclusion in the eventual Yellow Perch Management Plan.
- Work with FWS to outline plan to populate Tracking and Reporting Actions for the Conservation of Species (TRACS) with necessary data and information from past and present grants.

TRADITIONS

TRADITIONS INITIATIVES FOR 2018

- Develop a landing page for the Division's R3 efforts.
- Improve youth fishing at the State Fair Kids Fishing Pond through evaluation and institution of changes to sunfish production at Hebron State Fish Hatchery.

EXCELLENCE

EXCELLENCE ACCOMPLISHMENTS FOR 2017

- Trained division staff and volunteers provided shooting opportunities at events, and supported 52 events that reached 10,796 participants.
- More than 32,000 hours of in-kind match was provided to federal aid in PR and DJ.
- Worked with Sovereign Sportsman Solutions to successfully build a new system to sell licenses, check game and manage customers.
- The Call Center answered 61,555 customer service calls.
- Reviewed License structure and made recommendations.
- All commissioned staff received I-phones.
- A major update to commissioned officer radio communications equipment was completed with all officers receiving new portable and vehicle mobile radios, as well as training on the new equipment. The new radios feature many improvements such as blue-tooth microphones and advanced GPS capability.
- The Report Management System (RMS) was initiated with the Office of Law Enforcement and the Division of Parks and Watercraft.
- Wildlife has purchased and begun using remote trail cameras which may be monitored via a secure website. Made by an Ohio company, the appropriately named Buckeye Cam allows 5 separate cameras to send signals to a transmitter up to a mile away. The signal is then transmitted via cell signal to the website. These cameras have proven to be very useful for the detection and deterrence of illegal activity on public hunting areas. Their use has resulted in a number of cases being made.
- Completed LeanOhio Training.
- 3-year update of the CMS was submitted to FWS.
- Navigated 5-year OIG audit of FWS funded grants.
- Continued updates to WL land database.
- Obligated and expended \$12M+ for Wildlife Restoration and Hunter Education
- Obligated and expended \$7M+ for Sport Restoration, Aquatic Ed and Boating Access.
- Continued development of in-state Blue catfish annual stocking program, producing fish for the third time in 2017 at St. Marys SFH and for the first time at Hebron SFH.
- Completed first year of new net survey technique to more effectively catch young smallmouth bass and better predict year class strength and future potential for catchable-sized fish.

EXCELLENCE INITIATIVES FOR 2018

- Initiate a new research project to evaluate the inland yellow perch stocking program aimed at refining protocols that fisheries staff use to assess reservoir yellow perch populations, which will allow us to better evaluate the success of stocked yellow perch and to optimize this program.
- Develop a Corrective Action Plan (CAP) addressing any findings by the Office of Inspector General (OIG) regarding the 2017 audit.
- Work with districts/work units to process compliance, any issues and to streamline the process.
- Coordinate and update DOW Tactical Plans (2-year cycle).
- Utilize the new state-wide Grants Enterprise System.
- Complete customer management components of the new license system.
- Convert current and develop new license reports in Tableau.
- Develop project financial reports.
- Review current fiscal processes and procedures for efficiencies.
- The application and fulfillment processes for most of the division specialty permits will move to OWLS in FY2018
- The use of wildlife detecting K-9s will begin in FY2018 beginning with training and implementation of three K-9s in April 2018.
- The Evidence module of RMS will be implemented.
- Starting the process to hire and train approximately 20 wildlife officer cadets to fill vacant assignments and provide improved customer service and law enforcement capabilities in all districts and on Lake Erie.
- A field uniform change will be implemented for wildlife law enforcement personnel featuring a change to a distinguishing all-green uniform. The new shirts, pants and external body armor carrier option are more functional and comfortable in the field, accost savings over the current field uniform, and provide for a recognizable and professional appearance when conducting field duties.
- Review, compile and submit the Dingell-Johnson (DJ), Pittman-Robertson (PR) and State Wide Grants (SWG) in the upcoming grant cycle.

South Dakota

SOUTH DAKOTA STATE REPORT

Kelly Hepler, Secretary
South Dakota Game, Fish and Parks
523 E. Capitol
Pierre, SD 57501

2016-2020 Strategic Plan

The South Dakota Game, Fish and Parks' (GFP) mission is to provide sustainable outdoor recreational opportunities through responsible management of our state's parks, fisheries and wildlife by fostering partnerships, cultivating stewardship and safely connecting people with the outdoors. Customer service is a large part of this mission and continues to be at the forefront of who we are as an agency. Listening to customers, making changes to accommodate their needs, being helpful, courteous, transparent and reliable are all ways to building lasting relationships with them.

Throughout 2016, customer service became the driving force behind the development of the first ever, department-wide strategic plan. By 2017, implementation of the four long-range goals, 22 objectives and shorter-term strategies was underway. On March 30, 2017, the first quarterly review session took place to primarily review the 2017-2018 priorities as determined by the department secretary and the department's leadership team. The meeting also allowed the team to complete the following: identify year-to-date strategic plan success and return of investments, present management, tracking and reporting processes, develop key assumption statements, identify challenges and solutions and discuss the budget timeline and process development.

Of the 57 priorities outlined for 2017-2018 (made up of strategies and measurable outcomes), 30 are in progress and on track, 15 have been initiated, 10 have not had any progress at all and 2 have been completed to date.

For details on how the department approached the planning process, please visit <http://gfp.sd.gov/agency/information/default.aspx>.

Economic Impact Study Completed

The South Dakota Game, Fish and Parks (GFP) has historically relied on estimates from national surveys to determine the economic effects of wildlife-associated and outdoor recreation. In 2016, however, GFP commissioned Southwick Associates to specifically estimate the economic activity generated by hunting, fishing, state park visitation and other outdoor recreation activities in South Dakota. Large numbers of hunters, anglers, and outdoor

recreationists spend many days enjoying South Dakota's diverse outdoor recreation opportunities.

- Both residents and non-residents who visited state parks in 2016, fished, hunted, trapped, boated or viewed wildlife in South Dakota recreated for a combined total of 18.6 million days.
- Participating in these activities typically involves spending money on travel, supplies, and equipment, making the annual amount of these expenditures a significant contributor to the state's economy.
- Collectively anglers, hunters, trappers, wildlife viewers, boaters, state park visitors, and snowmobilers spend \$1.3 billion in South Dakota annually in support of these activities.

The top three activities accounting for nearly 90 percent of the \$1.3 billion are hunting (\$683 million), fishing (\$271 million) and state park visitation (\$212 million). The money spent, however, is only one part of the total economic effect associated with wildlife-related and outdoor recreation. The \$1.3 billion spent by those enjoying South Dakota's outdoor resources has a significant effect on the state's economy, generating directly and indirectly nearly \$1.9 billion in economic activity throughout the state.

This outdoor activity supports an estimated 18,000 full and part-time jobs which provide \$520 million of income.

- In addition, it contributes over \$970 million to the state's GDP, and generates over \$83 million in tax revenue for state and local governments.

GFP Aquatics Data Management System Nears Completion

Game, Fish and Parks has been working with ESRI, an international GIS and data management company, on development of a standardized database for housing, analyzing, and disseminating fisheries data collected in South Dakota. The project is nearing completion. Staff will have the ability to remotely collect data on digital tablets, download data directly to the database, and then analyze the information. The new process will greatly reduce staff time spent entering and analyzing data.

One of the most exciting aspects of the new data management system will be the "one-stop shopping" for both internal and external publics to gain access to fisheries data collected by the department. Working with the mapping capabilities of ESRI, much of the fisheries information that was previously housed within individual offices around the state will now be available on a point and click map of South Dakota. This data dissemination tool will aid all types of fish information seekers from department administrators to university researchers to anglers.

One of the biggest benefits of working with ESRI on development of the data management system is the lack of custom applications. With most of the applications utilizing

ESRI supported products, annual maintenance and regular re-building of the system will not be necessary. This will be a major cost savings to the State of South Dakota.

Introduction of Walleye into Selected Black Hills Fisheries Planned

Due to increasing interest by anglers for more diverse fishing opportunities within the Black Hills, GFP investigated the topic of introducing walleye into Black Hills fisheries. In an attempt to better identify angler wants and desires regarding introducing walleye in the Black Hills, GFP created a short information video and an online survey on the topic, which was distributed to all anglers with a valid email address. Results from this survey indicated that while a large number of anglers were in favor of walleye being introduced into the Black Hills, there were a proportion of anglers who were not in favor of walleye being stocked in the area. As a result, GFP will be stocking walleye into two of the four large reservoirs in the Black Hills. The goal of this is to provide the opportunity for anglers to fish for walleyes in Sheridan and Stockade reservoirs, while still providing opportunity for coldwater species where walleye will not be part of the fishery in Deerfield and Pactola reservoirs.

Lake Oahe Walleye Tagging Study

GFP began a tagging study in 2013 to learn more about walleyes in Lake Oahe and the Garrison Reach of the Missouri River. This project is a cooperative effort between South Dakota State University, North Dakota Game and Fish Department, and GFP. Changing conditions in Lake Oahe following the 2011 flood spurred recent tagging efforts. A large reduction in rainbow smelt abundance was of particular concern. The current study is helping GFP understand how walleyes respond to low prey abundance. Thankfully, coldwater prey fish numbers (both rainbow smelt and lake herring) started to bounce back over the last few years, affording us an opportunity to also understand how the Lake Oahe walleye population responds to a *recovering* prey supply.

A total of 34,358 walleye were tagged from 2013 through 2016. Tagging took place at 29 different locations, from Garrison Dam to Oahe Dam. Tagging efforts began in early April and ended in mid-to-late May each year. So far, a little over 20% of the walleye tagged have been caught and reported. Because the vast majority of tag returns come from harvested fish, we know where a fish was initially tagged and where it was when it was caught; we don't know where it was in between, but we can infer the *minimum* distance traveled. Some interesting movement trends include:

- A 13.5 inch male walleye traveled 298 miles downstream in one month.
- In general, fish tagged further downstream tend to be encountered closer to their original tagging location than fish tagged in the upstream portion of the reservoir or in the Garrison Reach.
- Males and females tagged at the same location show different movement patterns. For the majority of tagging locations a greater proportion of females are captured downstream.
- There is also evidence to suggest that larger fish move further distances.

Natural mortality varies within Lake Oahe, but decreased throughout the study. In 2013, a liberal bag limit (8 fish/day) allowed anglers to capitalize on a large population of small walleyes hatched in 2009. Estimates from creel surveys suggest that 2013 was the highest harvest on record for Lake Oahe, at over 700,000 fish. Estimated exploitation was 26 % in 2013, which is well below what is considered too high for a walleye population.

Yellow perch production at Blue Dog Hatchery

Hatchery staff continue to work on techniques to improve yellow perch survival from the egg to the fingerling stage. Recent findings have indicated that reducing formalin concentrations from 1,667 to 834 mg/L during 15 minute prophylactic treatments does not decrease egg survival and will produce longer fry at hatching. Longer fry at hatching likely has positive effects on post-stock survival. Additionally, experimental structures are being used to incubate eggs in tanks rather than in hatch trays where egg suffocation is more likely to occur during the final days of development. Preliminary results indicate that the tank structures allow increased water flow to occur which reduces egg mortality due to suffocation and thereby allows the eggs to be incubated for a longer timeframe before being stocked. Finally, placing eyed eggs on conifer trees has produced higher survival to the fingerling stage compared to other stocking techniques that have been attempted during previous seasons in hatchery ponds.

AIS Regulation Changes for 2017

The Game, Fish and Parks Commission made significant changes to the AIS regulations for 2017 in response to zebra mussel infestations in Lewis and Clark Lake and the Missouri River below the reservoir. These regulations work together as a package, not only to protect South Dakota lakes and rivers from new AIS introductions, but also to make compliance faster and easier for boaters and anglers. Rule changes include:

- Creating a list of waterbodies that will be classified as Containment Waters. These are waterbodies that have an AIS of concern in them and require special designation to facilitate management efforts.
- Allowing the creation of Local Boat Registries at Containment Waters. The Local Boat Registry program will give boaters that participate the freedom to more easily transport and store boats locally in areas with Zebra mussel infestations, while restricting their movement to other waterbodies unless they are decontaminated.
- Requiring boats to be decontaminated if they are used on a containment water and either have a ballast tank with undrained water (like a wakeboard boat) or are moored in a containment water for more than three days.

The purpose of these rules is to ensure that water that may hold mussel veligers and boats with very small mussels attached to the hull are properly cleaned before they are used in a different waterbody.

Customer Service and Communication

Customer service is the foundation of how we conduct business at the South Dakota Game, Fish and Parks (GFP); whether it is in person, in the field or park, on the phone, online or through our social channels.

In an effort to provide expanded coverage outside of current business hours, as well as increase available personnel, GFP began contracting with Five Star Call Centers in Sioux Falls on September 13, 2016. GFP customers no longer receive a busy signal and they have an opportunity to speak with an individual, seven days a week, 7 a.m. – 9 p.m. CT. To date, the call center has fielded over 19,000 calls on behalf of the department.

Sending targeted emails to hunters, anglers and campers is one of the best ways to inform them on topics such as: season dates and regulation changes, application openings and deadlines, commission meetings and agenda items, news and reminders, state park activities and events and more all related to the outdoor opportunities provided in this state. Annually, GFP typically sends over 230 emails to hunters, anglers, campers and other outdoor enthusiasts. In 2016, these emails went out to a total of 6,014,847 million different email inboxes.

With nearly 35,000 page likes on Facebook, 6,400 followers on Twitter and over 1,100 Instagram followers each of these platforms proves that GFP continues to stay responsive to customer needs while listening and engaging in two-way digital conversations. On May 1, 2017, the department launched a #BehindtheBadge campaign which features weekly videos and photos from conservation officers and park rangers; allowing our customers to get to know them a little better and understand why they are vital to the communities in which they reside. To date, the #BehindtheBadge campaign has reached more than 135,000 individuals on Facebook and Twitter.

Currently, our department is undergoing the reconstruction of a new website and mobile app. At the 30,000 foot level, gfp.sd.gov is serving its purpose, but based on analytics, users are accessing the most common features and not finding other buried content. Based on research and feedback, a variety of information is hard to locate and key information is not highlighted in a way that is visible or searchable for the user. GFP customers are gearing up for their next outdoor adventure, right now. They are seeking advice, comparing brands and making purchase decisions. It's not enough to just build a website or mobile app and expect customers to end up there. Through the reconstruction process, GFP is committed to helping inspire customer confidence in the agency while enhancing the user experience which sets the stage for the next phase – marketing automation. The site and mobile app will launch in December.

State Parks Remain Popular Destinations

South Dakota state parks set yet another record in 2016. The number of camping units served in state park and state recreation area campgrounds was up four percent from 2015. The park system's nearly 4,200 campsites and 215 camping cabins hosted over 328,000 camping units and visitation exceeded 7.3 million. Park use in April, May, September and October was significantly

up indicating that marketing that spring and fall are great time to use the parks is being heard. A new visitor center at Custer State Park hosted nearly 200,000 of the park's 1.9 million visitors in 2016 and hopefully encouraged them to extend their stay in the Black Hills region.

Volunteer service in the parks also continues to rise, and will set a record for the third year in a row. In 2016, over 400 individuals and 10 groups contributing over 115,000 hours in parks across the state. This is an equivalent of 55 FTE. Visitor experiences are greatly improved by volunteers, who contribute their time and talents in positions such as campground hosts, maintenance workers and special event helpers.

State Park Visitor and Education Centers Being Developed

An outdoor education center is being developed at South Dakota's oldest state park while a new visitor center opens in the state's newest state park. Custer State Park's 80-year old former visitor center is being refurbished as an outdoor education center. The education center is on pace to open this fall and will feature indoor and outdoor classrooms, nature displays, youth activity space, a reference room, a mineshaft and a nature based playground. At Good Earth State Park, established in 2013, an \$8.6 million visitor center was opened to the public in May, 2017. The 11,000 square foot visitor center interprets the story of the Omaha/Ponca and Ioway/Otoe people who called the area home for over 250 years during the middle of the last millennium. In addition to the exhibits and a 19 minute film, over 100 historical educational and interpretive programs will be staged from the visitor center each summer. The visitor center and grounds will be available for private and public events. Funding for both the Custer State Park education center and Good Earth State Park visitor center came primarily from private donors through the effort of the South Dakota Parks and Wildlife Foundation. Split Rock Studios of Minneapolis provided much of the design work and exhibit fabrication for both centers.

Mickelson Trail to Mount Rushmore Connector Trail Environmental Impact Study

The 114 mile long George S. Mickelson Trail is one of the most popular biking/hiking trails in the United States. Game Fish and Parks has proposed a 15 mile spur trail that would connect the trail to Mt. Rushmore National Memorial. Much of the trail would traverse U.S. Forest Service property, making the Forest Service the lead agency for the EIS. The EIS continues to be on hold as the Forest Service has not directed the consultant, HDR, to conduct any further analysis. After the EIS is completed by the Forest Service, the National Park Service will also complete a project review process focusing on resource impacts and bike allowances at Mt. Rushmore.

Park Management Major to be reestablished at South Dakota State

Over the past year, Department staff has worked with South Dakota State University faculty in the College of Agriculture-Biology's department of Natural Resources to reestablish a Park Management major. Several years ago the major was transferred to the College of Education & Human Science's department of Health and Nutritional Science and suffered from a lack of natural resource and land management emphasis. The Parks Division and the College have worked together to develop a curriculum that will emphasize 4 critical knowledge

components to enable students to successfully operate in the field of park management: 1) natural resources, 2) business management, 3) human dimensions, and 4) land management/planning practices. Currently the new major has received approval from within the University and is awaiting approval of the Board of Regents at a June 2017 meeting.

State Recreation Area offers Deer and Turkey Hunts for Disabled Hunters

The 24th annual Oahe Downstream Recreation Area Hunt, which allows hunters in wheelchairs to deer hunt, was held in November. Nine hunters participated and eight successfully filled their tags. One of the hunters took the largest buck ever harvested at Oahe Downstream. In addition, the Oahe Hunt was presented with an amazing and inspirational donation this year. Jacob Haas of Sioux Falls celebrated his eighth birthday by asking his friends to donate money to a worthy cause, rather than bringing a gift. Jacob then partnered with his local Scheels sporting goods store to provide 12 new shooting bags for the hunters at the Oahe Hunt. The hunt is sponsored by the Game, Fish and Parks and the Corps of Engineers. Game, Fish and Parks sponsors a turkey hunt at the park for wheelchair bound hunters each spring.

Capital Campout and Outdoor University Successful

The first-ever Capital Campout on June 10-12 hosted 59 families for campfire songs, treats and tent camping on the state Capitol lawn. On Saturday, the campers joined nearly 800 others for Outdoor University, which feature activities such as air rifle shooting, archery, kayaking, canoeing, fishing, campfire cooking and more. The event was successful in reaching folks new to the outdoors. A survey of participants indicated that within the last year, nearly 45% had not been camping, 50% of attending families hadn't went hunting, and 56% had went fishing twice or less.

Spearfish Canyon

The Game, Fish and Parks Department purchased 73 acres of land in the Black Hills that encompasses Spearfish Falls. For most of a century, the land was owned by Homestake Mining Company and the waterfall was silent, having been diverted for gold processing purposes. With the mining era over, the waterfall which several generations never saw, is now flowing and is a favorite stop in scenic Spearfish Canyon. The Department has made substantial improvements to the trail leading to the falls and plans to dedicate the improved trail in the fall of 2017.

Pollinator Plots Established in State Park Areas

Working side by side with local volunteers, school groups and Pheasants Forever club members, state Game, Fish and Parks staff established or prepped for pollinator plots in thirteen state park area. In addition to the pollinators attracted and habitat provided, the plots will be a tool for nature programming this summer.

2016 Walk-In Area Program for Hunter Access

Over 1.2 million acres of private land were enrolled statewide in the Walk-In Area (WIA) program providing public hunting access by 1,436 cooperators. GFP also leased private land for public hunting access through our Controlled Hunting Access Program (CHAP) which provides additional flexibility for the landowner and more control of the number of hunters using the area. Nine CHAP areas totaling 20,000 acres were enrolled statewide in 2016 providing over 900 hunter days of use.

Animal Damage Control & Wildlife Damage Management

South Dakota's predator control program is operated cooperatively between South Dakota Game, Fish and Parks (SDGFP) and USDA-APHIS-Wildlife Services (USDA-WS). SDGFP provides predator control primarily with ground methods (i.e. traps, snares, calling, and shooting) while USDA-WS provides predator control via aerial control, exclusively. Due to a fatality in another state in December 2016, USDA-WS grounded aerial predator control operations nationwide, until safety protocols and procedures could be reviewed. This action left many South Dakota producers without aerial predator control services at a critical time as many livestock producers begin calving in January and February. Producers in a few areas were able to utilize local predator control districts for aerial predator control assistance coordinated by SDGFP staff, but the majority of producers did not have access to these services. In late-January, SDGFP initiated an emergency contract with a pilot from a nearby state to provide aerial predator control services in western South Dakota while USDA-WS's aircraft were grounded. This contract aircraft flew over 125 hours and removed more than 400 coyotes at a critical time for livestock producers. USDA-WS aerial operations resumed in late-February. Since that time, both aircraft have been extremely busy and combined have flown more than 400 hours. These activities, combined with SDGFP's ground efforts have impacted more than 500 livestock producers and have removed over 3,000 coyotes, statewide.

This past winter, South Dakota experienced a severe winter with deep snow in many areas. Over 300 landowners requested assistance from SDGFP with deer damage to stored livestock feed. Most deer depredation assistance involved the use of protective fencing and panels as well as hazing techniques and short-stop feeding. In addition, GFP authorized over 963 deer depredation tags on 37 different depredation hunt locations, all in western and central South Dakota. This large number of depredation tags was a record for the program within the last 15 years. Due to the large amount of deer depredation that landowners experienced, SDGFP will be organizing a stakeholder meeting this summer to evaluate and adjust programs and services to better meet the demand from private landowners. In 2017, there was legislation passed that earmarked an additional \$200,000 (from a transaction fee increase when hunting licenses are sold by vendors) to wildlife depredation assistance. These additional funds will bring SDGFP's wildlife damage management budget to approximately \$2 million, statewide.

Pheasant Population Status & Harvest

During the 2016–2017 pheasant hunting season, 61,746 resident and 81,270 non-resident hunters harvested an estimated 1,172,000 rooster pheasants. Total pheasant hunters decreased by

5% while total harvest declined 7% from the previous year. Harvest averaged 1,513,000 during the previous ten years. The estimated pre-hunt population estimate was 8.2 million (95% CI: 7.4–9.2 million), a 7% increase from the previous year estimate of 7.7 million. The previous ten years' average was 8.4 million. The decline in harvest was mostly due to fewer hunters as the average harvest per hunter remained nearly unchanged at 8.4. Fewer hunters may have been in response to the 19% decline in the August roadside pheasant survey. The disagreement in trend between the population estimate and August roadside survey is unusual and could have been caused by poor survey conditions or natural variation in the data sets. The pheasant population is well below levels observed in 2007 (11.9 million) when 1.5 million acres of Conservation Reserve Program (CRP) Grasslands were available to nesting pheasants. Current CRP acreage is slightly below 1 million acres.

SD Deer Collaring Effort

Annual rates of change within a deer population are influenced primarily by adult survival and the number of fawns that reach one year of age. Thus, the primary objective of these efforts is to estimate annual survival rates of whitetail and mule deer adults, juveniles, and fawns occupying agricultural, prairie and forested landscapes throughout South Dakota. These data were used to model deer populations and rates of change, and ultimately assisted GFP staff and the Commission in developing the 2017-18 deer season structure. In 2016, survival monitoring for white-tailed deer was conducted in 5 study areas – Grand River, Black Hills, Upper James River, Prairie Coteau, and Big Sioux River. White-tailed deer survival rates varied depending on study area and age class, and were documented as follows: adult males (n=108) ranged from 56-62%, adult females (n=410) ranged from 69-84%, juveniles (n=234) ranged from 60-83%, and fawns (n=176) ranged from 64-76%. Survival monitoring for mule deer was conducted in 4 study areas – Black Hills, White River, Belle Fourche River, and Upper Missouri River. Survival estimates for mule deer were documented as follows: adult females (n=369) ranged from 80-88%, juveniles (n=173) ranged from 56-89%, and fawns (n=171) ranged from 55-66%.

Adult and juvenile deer were again captured and radio-collared in the winter of 2017 in order to supplement sample sizes/replace mortalities. In addition, one white-tailed deer survival monitoring study area was added (Lower James River). Overall, winter captures added 570 radio-collared deer to the survival monitoring efforts across the state. Furthermore, approximately 400 fawns will be captured in early summer of 2017.

Private Lands Habitat Program Summary

From the multitude of wildlife species dependent upon its diverse landscapes to its world-famous pheasant hunting, South Dakota's natural resources contribute greatly to our overall quality of life. With approximately 80% of South Dakota's land area in private ownership, farmers, ranchers, and landowners continue to be the most influential habitat stewards for resident and migratory wildlife populations.

South Dakota Game, Fish & Parks (SDGFP) recognizes landowners as an essential partner in ensuring we meet our agency's responsibility of managing South Dakota's fish and wildlife

trust resources. Wildlife management not only involves biological and science-based habitat management practices, but also gives careful consideration to the wide array of social values held by the public and South Dakota landowners.

SDGFP offers a variety of voluntary habitat incentives to landowners through the Private Lands Habitat Program. The principal objective of the program is to provide cost-share incentives to cooperating landowners who establish wildlife habitat on their lands, thereby helping to sustain and enhance local wildlife populations. These habitat incentives are designed to (1) meet the biological needs of a variety of resident and migratory wildlife species, (2) complement conservation program opportunities offered through the federal Farm Bill, and (3) meet the needs and desires of private landowners seeking to restore, protect, and enhance wildlife habitat on their lands.

Improved wildlife habitat and healthy wildlife populations resulting from successful program implementation and delivery also provides opportunities for countless hours of consumptive and non-consumptive wildlife related recreation activities to many South Dakotans and visitors to the state. Landowners cooperating with SDGFP through these programs agreed to open their lands to reasonable use by the public. The following specific habitat practices are offered through the Private Lands Habitat Program:

Wildlife Habitat Fencing - This practice involves using exclusionary fences to protect and enhance existing wildlife habitat such as woody cover plantings and nesting cover from livestock grazing.

Grassland Habitat Enhancements - This practice involves reestablishing grassland vegetation on previously farmed areas as nesting, brood rearing, foraging, and winter cover for wildlife. Plantings involve either a dense nesting cover mixture of alfalfa, sweet clover, and wheatgrasses; or a mixture of native warm and cool season grasses and native forbs. Grassland habitat restoration activities on previously cropped land have also become a widely utilized practice by cooperators who are reseeding marginal cropland areas back to grass as part of managed grazing systems. Grassland habitat enhancements also include cost-sharing development of infrastructure (e.g. cross fences) as part of managed livestock grazing systems to protect and enhance wildlife habitat and better manage livestock grazing to benefit grassland dependent wildlife, with a special emphasis placed on riparian areas and large tracts of intact native rangelands. Additionally, cost-share is provided to replace woven wire fence on managed grazing systems with three- and four-wire wildlife-friendly design fences in western South Dakota's pronghorn range.

Woody Habitat Establishments - This practice involves planting woody cover plots to benefit resident small and big game species. Eligible practices included costs incurred for plant materials (trees & shrubs), actual planting costs, and weed barrier fabric and installation.

Small Game Food Plots - This practice involves planting and maintaining annual food habitat plots to benefit resident small game species.

Wetland Restoration and Enhancement - This practice involves restoring, enhancing, or creating wetland habitat to benefit myriad migratory and resident wildlife species.

In 2016, SDGFP accomplished the following through its Private Lands Habitat Program:

Management Practice	Cooperators	Acres	GFP Expenditures
Wildlife Habitat Fencing	21	209	\$34,943
Grassland Enhancements	174	43,055	\$810,914
Woody Cover Establishments	47	154	\$224,596
Small Game Food Plots	836	9,517	\$212,335
Wetland Restoration/Enhancement	26	202.9	\$115,461

TB Surveillance

In March of 2017, a cattle herd in northwestern South Dakota was confirmed with bovine tuberculosis (TB). South Dakota Game, Fish and Parks (SDGFP) worked closely with South Dakota Animal Industry Board (SDAIB) to implement a wildlife surveillance plan to assist in the monitoring of this TB incident and to determine if wildlife within the affected area have been exposed or carrying the disease. The objective is to implement a surveillance program which will consist of both a short-term and long-term surveillance effort.

A public meeting was held on March 23rd, 2017 at the high school in Buffalo, South Dakota, to present a wildlife surveillance plan to the landowners and producers of Harding County in response to the recent discovery of bovine tuberculosis (TB) in cattle. Approximately 100 members of the public attended the meeting and many more watched the presentation over a live video stream feed. SDGFP staff members from SDGFP and the South Dakota Animal Industry Board were present and answered many questions.

On March 27, 2017, SDGFP initiated its short-term wildlife surveillance effort. A “field laboratory” was established at the U.S. Forest Service Office in Camp Crook, South Dakota and a small sampling of wildlife was taken to test the processes. A U.S. Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS) fixed-wing aircraft conducted flights and removed 11 coyotes for testing. SDGFP staff conducted removal of wildlife from the ground and sampled 15 pronghorn, 11 mule deer, and 2 raccoon for TB testing. The goal of working through the collection and sampling process and streamlining the laboratory protocol was successful. All samples collected from this day’s activities were shipped to the USDA-APHIS National Veterinary Services Laboratories in Ames, Iowa for testing.

Aerial removal of mule deer, white-tailed deer, and pronghorn was conducted from March 28-29, 2017, with a contracted helicopter on areas within the sampling area where landowner permission has been obtained. Evaluation of any further short-term wildlife surveillance for TB will be conducted once laboratory test results have been received in approximately 6-8 weeks. All salvageable deer and pronghorn removed from this surveillance

effort will be processed and stored until test results become available. In total 111 deer, 42 pronghorn antelope, 37 coyotes, and 9 raccoon were removed and samples submitted.

Online Breeding Bird Atlas

A breeding bird atlas is an effort to determine the distribution of all breeding bird species and their general habitat needs in a specific area, such as a state. The sample unit is called a breeding bird atlas block. SDGFP funded and helped coordinate, with the Bird Conservancy of the Rockies, the second statewide South Dakota Breeding Bird Atlas. Project highlights included 252 species recorded, 239 species confirmed breeding, 13 new species confirmed during the second atlas, and an average of 57 species per atlas block.

SDGFP is finishing work on an interactive website to allow the public to view and analyze atlas results. Users can explore the 433 atlas survey blocks or any of the species documented during the project. A user may locate a block from a dropdown county list or from a statewide map. Once a block is selected, the user can view the summary report to see species and their confirmation level and block effort (number of visits and hours spent on that block). Users can also view species accounts. Each account includes background information (distribution, habitat, breeding biology), high-quality photos, an atlas map sorted by breeding status, and a comparison map between the first and second atlases. Users can also view, download or print a standalone species account. Another option is to view the habitat types for all observations to learn where breeding records were found for each species. Additional report options within the species portion of the website are a species' block summary, a statewide summary for the selected species, and a statewide summary for all species.

The design and testing of such a tool is complex and time-consuming. SDGFP plans for the website to be available to the public during the summer of 2017.

Wisconsin



Wisconsin Department of Natural Resources 2018 State of the State Report

Sanjay Olson, Administrator
Division of Fish, Wildlife, & Parks

DEPARTMENT OF NATURAL RESOURCES STRATEGIC ALIGNMENT EFFORT

WDNR continues its efforts regarding a strategic alignment effort with the purpose of designing an organizational structure and allocating its limited resources to excel at delivering on all elements of the department's mission while improving customer service and enhancing resource protection.

Beginning in 2017 and into 2018 the department is implementing its strategic alignment recommendations. Full implementation is expected to be achieved by end of 2018. The department is continually evaluating the success of the strategic alignment implementation through key metrics to achieve identified goals.

BUREAU OF WILDLIFE MANAGEMENT

Wisconsin Elk Translocation and Management

In 2017, the Wisconsin Elk Translocation project shifted its focus to northern Wisconsin, near the site of the original 1995 elk reintroduction in Clam Lake. Following a translocation of Kentucky elk, 32 animals were released into the Flambeau River State Forest in July of 2017. These additional animals are expected to diversify herd genetics, quickly fill quality habitat, and provide the herd with a population boost. Including the new elk, the Clam Lake elk herd is estimated to reach just over 200 animals following the 2018 calving season. No elk will be translocated in spring of 2018, but trapping and translocation efforts will resume during the 2018-19 winter. Elk from that effort will join the other elk in the Flambeau River State Forest.

Once the Clam Lake elk herd has reached 200 animals, the department may authorize a hunting season and Wisconsin's first modern elk season is slated for the fall of 2018. The department will issue 10 elk hunting licenses and tags: five will be allocated to the Ojibwe tribes in the ceded territories of Wisconsin, four will be awarded to lucky Wisconsin residents through a department drawing, and one will be raffled through the Rocky Mountain Elk Foundation. Out of every \$10 application fee, \$7 will be earmarked for elk management in Wisconsin.

Deer Management

In 2017-18, the department completed its third full year of working with 71 County Deer Advisory Councils (CDAC) to assist with local deer management decisions. During the 2017 meetings, the CDACs made recommendations on 3-year deer population objectives (increase, maintain or decrease the herd), revising deer management unit boundaries, and discussed chronic wasting disease impacts. The department continues to see increased public interest and

participation in the CDAC process and is pleased with the progress of this relatively new effort to involve the public in deer management decisions.

Another program, the Deer Management Assistance Program (DMAP), completed its fourth year of enrollment in March 2018. The program involves wildlife biologists and foresters working with private landowners and public land managers to improve habitat for deer and other wildlife on their properties. The program is currently working with over 1,300 property owners and has over 271,000 acres enrolled across the state. DMAP cooperators are invited to get involved in the program by networking with local landowners, developing cooperatives with neighboring landowners, participating in citizen science opportunities, and attending DMAP workshops. The program also provides DMAP cooperators the option to provide mentored hunting and trapping opportunities to novices by working closely with conservation organizations.

Chronic Wasting Disease

In 2016, Governor Scott Walker announced several initiatives to address CWD. The initiatives include:

- Seeking input from hunters, landowners, farmers, and foresters in every county using County Deer Advisory Councils (CDACs);
- Conducting a comprehensive study of deer population dynamics within high CWD prevalence area (the Southwest Wisconsin CWD, Deer and Predator study);
- Creating Best Management Practices for the deer farm industry;
- Conducting more frequent fence inspections for deer farms; and
- Developing quicker test results for hunters.

During the winter of 2017, an ad hoc committee met several times to review the state's CWD response plan and recommend additional actions for addressing CWD. The department brought the committee's recommendations to the CDACs for public and stakeholder review before they were finalized. Implementation of the results is underway.

CWD Surveillance

The Wisconsin Department of Natural Resources (DNR) began monitoring the state's wild white-tailed deer for chronic wasting disease (CWD) in 1999. Three positive deer were identified from Dane County through random testing of hunter harvested deer in November 2001. Since 2002, nearly 210,000 deer have been tested in Wisconsin for CWD, with over 4,100 testing positive as of March 2018. CWD was detected in the wild in Vernon, Milwaukee, Dodge, & Lincoln counties for the first time during the 2017-18 deer season.

Surveillance continued in the southern farmland zone as well as sampling deer in the 10-mile radius areas surrounding the Juneau, Adams, Portage, & Washburn County wild positives. In the Washburn area, sampling expanded out from the 10-mile radius to include the four counties of Polk, Barron, Burnett, & Washburn. Sampling also occurred in 10-mile radius areas surrounding the locations of captive facilities with a CWD positive detection including Marathon, Eau Claire, Oconto, Oneida, Shawano, & Waupaca counties.

As previously mentioned, several counties had CWD detected in the wild for the first time during the 2017 season. These included three deer in Vernon, one in Milwaukee, one in Dodge, and one

in Lincoln. In central Wisconsin, there were two wild positives detected for the first time in western Juneau and six additional positives detected in the surveillance area in Adams County. No additional positives were found in the surveillance areas around previous wild positives found in Portage and Washburn counties. No positives were found in surveillance areas around previous captive facility positive locations as well.

From 2002-2016, CWD prevalence within our western monitoring area has shown an overall increasing trend in all sex and age classes. During the 15 years, the trend in prevalence in adult males has risen from 8-10 percent to over 30 percent and in adult females from about 3-4 percent to nearly 15 percent. During that same time, the prevalence trend in yearling males has increased from about 2 percent to over 10 percent and in yearling females from roughly 2 percent to about 9 percent. It is important to keep in mind that annual prevalence estimates are subject to sampling variation, and that trends over time give better information

Wolves

In 2016-17, monitoring efforts detected an overwinter minimum wolf count of 925-952 and 230 packs - this represents a 6.8 percent increase from last year's minimum wolf count of 866-897. Data available include the 2016-17 overwinter minimum wolf count and packs identified during the monitoring period. These data were collected through the assistance of over one hundred [volunteer trackers](#) - these volunteers surveyed over 14,000 miles in 2016-17.

The 2016-17 minimum count represents the third year of growth and a record high for Wisconsin. Wolf count efforts are conducted in winter when the population reaches its annual low point. Wolf pups born in spring cause population increases, followed by reductions resulting from pup and adult mortalities.

BUREAU OF FISHERIES MANAGEMENT

Trout Habitat and Fishery Management

From July 1, 2016 through June 30, 2017 over 100 stream reaches were improved or maintained with multiple partners and cooperators. These projects ranged from brushing and improving access to fixing eroded banks and restoring stream channels. The development projects totaled over 27 miles of habitat work and many more miles of streams were maintained and brushed for access. Beaver management on trout streams was ongoing throughout the fiscal year.

The Wisconsin fisheries program initiated an effort in 2017 to write a trout management strategy and in the fall of 2017, the DNR trout team developed a trout management public involvement plan. This included the formation of a stakeholder group and the public process was presented to the Natural Resources Board in December 2017. The DNR trout team began selecting diverse stakeholders to represent anglers, businesses, non-consumptive groups, landowners, Wisconsin Conservation Congress and other partners. Members of the public were also invited to apply to become a member-at-large. Based on the applications, a member-at-large was randomly selected from each district of the state. The first stakeholder meeting was held in January 2018.

Walleye Initiative

The Wisconsin Walleye Initiative (WWI) was developed by the Department of Natural Resources and the Governor's office to increase the number of walleyes in state water systems by expanding production of large fingerling walleye at state, private and tribal fish hatcheries for stocking. This historic investment in Wisconsin's walleye fishery will benefit all users and Wisconsin's angling related economy. Nine private and tribal groups were awarded funds to improve their walleye rearing infrastructure in the spring of 2014 to assist in this effort. The department has reimbursed these grantees \$1.974 million of the \$2 million dollars available for construction and other eligible expenses. These projects are now completed and grantees are in production with their upgraded facilities. Work has also been completed on the Departments' infrastructure projects, and we are now using all of the upgraded facilities to produce fish for stocking. The WWI stocked a total of 881,977 fish in 2017.

Fish Propagation

Fisheries staff raised and stocked over 6.8 million fish this past year and that includes the rearing of a record number of large fingerling walleyes in 2017, the fourth year in a row we have had a record stocking year for walleye. The program is currently in the predesign phase to rebuild the Kettle Moraine Springs Hatchery in Sheboygan County, Wisconsin.

Great Lakes

The Wisconsin Fisheries program initiated an effort in 2017 to update the over 30-year-old Lake Superior Fisheries Management Plan. In late summer and fall of 2017, meetings were held with the Lake Superior advisory panel and other interested stakeholders to form the basis for the updated plan. The program also finalized the ten-year Lake Michigan Integrated Management Plan as well as the Lake Michigan Stocking Strategy for the next three years. We have been working closely with many external partners - particularly within the Green Bay area. These projects include use of acoustic telemetry with the assistance of UW-Stevens Point, collaboration between commercial fishers and department staff to study by-catch, and a guide reporting system to better characterize the winter angler ice fishing season.

OFFICE OF APPLIED SCIENCE (Wildlife and Fisheries Research)

Coarse Woody Habitat (CWH) and Fish Study

Suitable habitat is a key component to sustainable fisheries management. Previous research has suggested that much of the carbon found in fish from Wisconsin's northern lakes derives from terrestrial sources (degradation of littoral zone coarse woody habitat (CWH), leaf litter) and that CWH loss from lakes can be detrimental to fishes. Lakeshore residential development thins the riparian forest and removes CWH from lakes, which decreases terrestrial inputs of carbon. The Wisconsin DNR promotes fish structural habitat additions, such as tree drops and "fish sticks", but we remain uncertain of their efficacy. Do these additions merely attract fish and anglers, or do they also increase the carrying capacity (production) of fish populations?

In 2015, Wisconsin DNR fisheries researchers initiated a long-term tree drop addition study on a Vilas County lake to answer the question: Does CWH increase production of walleye, muskellunge, smallmouth bass, and panfish. Following three years of pre-manipulation monitoring, about 160 trees will be dropped into the lake in spring 2018 to test for fish (production, recruitment, abundance, diet, growth, habitat use) and aquatic ecosystem

(zooplankton, benthic macroinvertebrates, nutrients, limnology, aquatic macrophytes) responses. Results of this study will be used to inform future fisheries habitat management efforts in Wisconsin lakes.

Southwest Wisconsin CWD, Deer and Predator Study

January 2018 marked the beginning of year two for the Southwest Wisconsin CWD, Deer and Predator Study. The study is principally concerned with the potential for chronic wasting disease to negatively impact deer populations. This initiative stems from Governor Scott Walker's commitment to reevaluating CWD in Wisconsin. We are exploring the infection rates at which CWD may reduce population levels. Other factors can influence deer populations too, such as hunting, depredation and habitat quality. Therefore, researchers will closely track these factors as well. This study will also estimate the abundance and distribution of bobcats and coyotes within the study area and will examine their impact on deer survival and behavior. Collaring deer, bobcats and coyotes allows researchers to determine survival rates, causes of mortality, movements and habitat use of these animals. Office of Applied Science staff will collar deer, bobcats and coyotes for a total of four years, and we will continue to monitor these animals for several years after the collaring concludes. This work is only possible with the participation of volunteer landowners in Grant, Iowa and Dane Counties, where our study area lies. They generously allow researchers to collar and monitor animals on their land, and we thank them for their support.

BUREAU OF NATURAL HERITAGE CONSERVATION

Proactive Monarch Butterfly Conservation

In 2017 Natural Heritage Conservation staff continued to support the MAFWA-led Mid-America Monarch Conservation Strategy initiative. NHC staff partnered with representatives from agriculture, transportation and utility rights of way, urban and suburban landowners, and public and private conservation lands to plan and host the Wisconsin Monarch Summit and establish the Wisconsin Monarch Collaborative, an informal group of stakeholders that will produce the Wisconsin portion of the strategy.

Lake States Forest Management Bat Habitat Conservation Plan

Michigan, Minnesota, and Wisconsin are working collectively on the Lake States Forest Management Bat Habitat Conservation Plan (Lake States HCP). The HCP, on schedule for 2019 completion, will streamline permitting under the federal Endangered Species Act while maintaining quality forest habitat across the three states. The HCP will cover Indiana bats, northern long-eared bats, little brown bats, and tricolored bats for forest management activities.

Habitat Management Gets a Boost from Volunteer Stewards

A record amount of habitat management and restoration work was achieved on State Natural Areas in 2017, benefitting both rare and game species and the people who enjoy these unique landscapes for hunting and recreation. In addition to high priority work by department Biologists and Technicians, over 500 volunteers provided over \$121,000 in value on 43 of these sites. The State Natural Area Volunteer Steward program was established in 2011 and now includes 35 volunteer groups. The NHC program relies on volunteers to help conserve these unique landscapes that are home to 90% of Wisconsin's endangered and threatened plants, and 75% of

our endangered and threatened animals. Stewards help control invasive species, clear brush, and collect seed on prairie, oak, and barrens habitats. These dedicated volunteers range from high school students to retirees who appreciate the natural heritage and beauty of these important public properties.

Investment in Citizen Science Successes

More than 12,000 volunteers now participate in citizen-based monitoring projects coordinated by the department each year. They contribute significantly to our understanding and are essential to many projects on plants, animals, and important habitats. For example, the Wisconsin Breeding Bird Atlas started over 20 years ago to document distribution and abundance of the state's breeding birds. During the most recent phase of this effort (2014 – 2019) 1,400 volunteers have already confirmed breeding of 239 bird species across the state.

Wood Turtle Habitat Improvement Project

Wisconsin was an active partner in a four-state/four-year partnership to improve turtle nesting success and turtle habitat, reduce adult turtle road mortalities, and assess the effectiveness of conservation actions for river turtle populations including the state-threatened wood turtle. The goals were to decrease nest predation and road mortalities and improve potential nesting sites for this species primarily in northern Wisconsin. NHC Biologists placed filter strip fencing along roadways where stream crossings occur to deter turtles from crossing the road, as well as half buried culverts to deter turtles from crossing roads and installed turtle-crossing signs to increase driver awareness near hazardous stream-road crossings. They also constructed enclosures and electric fencing to protect nests from mammal depredations. NHC biologists created nine new nesting sites along with measures to protect existing sites. Over 40 wood turtle nests have hatched in the last three years on these sites.

Wisconsin's Cave Bat Population in Trouble

In the 2017-18 hibernation season (Nov-April) NHC staff visited 60 caves, mines, and other suitable hibernation sites for white-nose syndrome (WNS) surveillance and to understand the local and regional effects of the deadly disease on Wisconsin's cave bat population. All sites visited had evidence of infection, and WNS is known in 25 of 28 counties with hibernacula in Wisconsin. Three species affected by WNS are experiencing sweeping declines in Wisconsin: northern long-eared, little brown, and tricolored bat. At sites in year four of disease progression, populations have declined 92% when compared to pre-WNS averages. Two on-going WNS-treatment projects are completing lab-based trials this spring, which will hopefully offer insight into effective treatments options for WNS. Both projects are partnered with NHC - one evaluating vaccine candidates (UW-Madison and USGS NWHC) and the other using Ultra-Violet light as a treatment for WNS infected bats (Bucknell, UW-Madison, USFS). Ongoing surveillance and WNS treatment research will be crucial for bat populations going forward in Wisconsin and across North America.

Kirtland's Warbler Recovery and Ongoing Commitment

In April 2018, the US Fish and Wildlife Service (USFWS) announced plans to remove the Kirtland's warbler from the federal endangered species list. The USFWS has met its recovery goals for the Kirtland's warbler, primarily in Michigan where the core population is found. Kirtland's warbler will stay on Wisconsin's endangered species list, but the state's small

population is on the rise, growing from only 11 birds in 2007 to 53 birds in 2017 in three counties. Wisconsin's availability of Kirtland's habitat in the northern counties will be important in the future if drier conditions occur in lower Wisconsin and Michigan latitudes. The USFWS, Wisconsin DNR, and various partners are committed to the continued conservation of Kirtland's warblers and their habitats in Wisconsin.

BUREAU OF LAW ENFORCEMENT

Law Enforcement Consolidation

WI DNR has moved into the implementation phase of the law enforcement consolidation efforts with the biggest change being law enforcement services on recreational properties (state parks). The change requires shift scheduling, several policy updates, and additional training and equipment. The recreation season of 2017 was a transition phase and in 2018 all law enforcement services are within the Bureau of Law Enforcement.

Elimination of Carcass Tags (Deer/Turkey)

Through legislative action in the fall of 2017 the use of carcass tags for deer and turkey was eliminated. Validation and attachment of a carcass tag on a harvested deer or turkey is no longer required by hunters. Hunters are required to carry proof of "harvest authorization" for the species, sex and location of the harvest. Proof of harvest authorization can be in the format of a printed authorization or valid Wisconsin Driver License. In addition, all registration of turkey and deer is either online or via phone call. This is a significant change for both the customers and officers with a learning curve for everyone.

Birch Pole Harvest

Using education, problem based policing and enforcement we continue to address the illegal harvest of white birch tree poles. Due to the ornamental market boom, white birch sticks that are 100" in length and less than 4" in diameter have been highly sought after. Illegal harvest is occurring on both public and private property with markets as far away as China confirmed.



21st Century Conservation Model for Success:

The World-Class Leader in Conservation

