

**INDIANA
STATE REPORT**
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License Fee Increase and Sales

The Natural Resources Commission in Indiana approved fee increases for hunting, fishing, and trapping licenses, as well as commercial licenses and permits in September of 2021. The fee increases went into effect in 2022. Hunting and fishing license fees had remained the same since 2006, and some commercial license and permit fees had not increased since the 1980s. A few commercial license fees had not been increased since the licenses were initiated in the 1970s. Deer hunting license fees had not increased since 2002. Support was given by partners throughout the state as well as the Indiana Governor's Office. The Department of Fish & Wildlife (DFW) notified license holders through a news release, monthly electronic newsletter, direct email to license holders, social media posts, website, and link in the online license system. License retailers were also notified. These increases helped to address the shortfall in the funding for the Department of Natural Resources' DFW and Law Enforcement.

The total number of licenses issued in 2022 experienced a decrease compared to the previous year, which was a decline of nearly 10% in 2021. Overall, fishing and hunting license sales fell to 11% and 13% respectively. Nevertheless, the overall revenue for the year grew by more than 25% due to an increase in license fees. Considering the surge in outdoor recreation as a result of COVID-19 in 2020-2021 and the license fee increase, both licensing volume and revenue exceeded projected sales forecast.

40 Stories for 40th Anniversary of Nongame Wildlife Fund

DFW collaborated on a year-long outreach effort celebrating the 40th anniversary of Indiana's Nongame Wildlife Fund by telling "40 Stories" about the Fund. The 40 stories were grouped into 12 themes, such as *technology fuels conservation* and *volunteers*, with one theme for each month of the year. Story maps were used to tell the stories in a variety of ways using pictures, videos, and graphics along with text and highlighted our donors, partners, and volunteers. All 40 stories were promoted through social media outlets and mass emails, and are housed on the [website](#). We adapted the 40 stories content into posters, a postcard, a looping video, and a giant banner for the Indiana State Fair.

Near the end of 2022, we increased outreach to donors in an effort to capitalize on the 40 stories. This included a special year-end donation request (postcard and sticker) that was mailed to potential donors. We saw a 100% increase in direct donations to Indiana's Nongame Wildlife Fund in 2022 compared to 2021. From these efforts we also created a consolidated donor list to be used in the future.

2022 Licensed Angler Survey

Historically, DFW has conducted a licensed angler survey every 10 years with the last one being conducted in 2016. The advances of online survey tools created the ability to conduct larger

scale surveys more efficiently and frequently. A planning developed survey questions focused on fishing habitats during the 2021-2022 fishing license period (frequency, driving distance, resource types used, and species targeted), general fishing habits (who do you fish with, where do you get information from, and experience level), agency trust questions (what is agency doing well at, does agency share my values), fish consumption habits, and demographics. The fish consumption portion was a partnership with the Indiana Department of Health and was paired with a paper survey distributed by the Indiana Department of Health to gain information about the consumption of fish by Indiana anglers.

The survey was delivered to all Indiana anglers with a valid email in our license database. This was different from previous angler surveys which consisted of only a subset of anglers receiving the survey. An open link to the survey was also available on the project website so anyone without an email on file could complete the survey.

The survey was distributed to over 300,000 licensed anglers with a specialized survey link which could only be used once. Nearly, 17,000 anglers participated in the survey and results from the survey were compiled using a Tableau dashboard so participants could view data.

Banded Pygmy Sunfish found in Twin Swamps Nature Preserve

Currently one of Indiana's eleven Special Concern fish species, the Banded Pygmy Sunfish was first discovered in Indiana in 2006 in Knox County. The diminutive species (rarely topping 2") can be found in the thickly vegetated oxbows, sloughs, backwaters, swamps, and ditches in the extreme southwest corner of Indiana, which is the northern extent of the species' range. Since the species' discovery, surveys have been completed throughout southwestern Indiana to better determine its current distribution/status in the state. In 2022, surveys uncovered two previously unknown populations in Cypress Swamp and Overcup Oak Swamp in Twin Swamps Nature Preserve, Posey County.

St. Joseph River Black Bass Survey

The St. Joseph River in Elkhart and St. Joseph Counties is one of northern Indiana's premier Smallmouth Bass fisheries. From late September through mid-October a team of staff conducted a Black Bass survey of the entire 40-mile section of the St. Joseph River running through Elkhart and St. Joseph counties. Eight different stations were sampled across 16.5 miles of the river totaling just over 12 hours of sampling. Sites ranged from 1.33 miles up to 4.23 miles. During the 12 hours of electrofishing, 426 Smallmouth and 54 Largemouth Bass were collected. Additionally, 11 Walleyes were also collected. In combination with the Black Bass survey the annual St Joseph River I&M fish sampling work was also completed and it consisted of 2 hours of nighttime electrofishing. During that time 100 Largemouth, 19 Smallmouth and 13 Walleyes were collected.

Indiana Fish Stocking Program

Curtis Creek Trout Rearing Station has approximately 150-200 adult captive Brown Trout broodstock for the State's inland stream stocking program. These fish are spawned each year to produce 30,000 green eggs which are incubated at Fawn River State Fish Hatchery (SFH). At 2"-3" the fish are transferred back to Curtis Creek and reared to 10"-12" at stocking the following spring. Approximately 10,000 brown trout are stocked into three northeast Indiana quality trout streams- Pigeon River, Little Elkhart, and Solomon Creek. These fish are designed to holdover and provide a trophy inland stream brown trout fishery.

Fawn River SFH is Indiana's provider for advanced walleye. Approximately 200,000 walleye fry are received from Cikana SFH in May. The fish are put on an aggressive feeding program requiring 100's of pounds of fat head minnows designed to rear 30,000 7"+ walleye by stocking in October. Because of the larger size the advanced walleye are expected to survive at much higher rates than the smaller 2" walleye fry that were traditionally stocked in Indiana northern lakes. The advanced walleye are the #1 requested fish by anglers to be raised in the state's hatchery system.

JC Murphey Lake rehabilitation

JC Murphey Lake (1,000 acres) at Willow Slough Fish and Wildlife Area is in the process of a complete rehabilitation. A fish salvage has occurred and a total of 2,400 fish, including, adult largemouth bass, bluegill, black crappie, redear sunfish, and channel catfish have been removed from the lake and are being stored for restocking the lake in fall 2023. The lake has also undergone dredging and fish habitat structures are being built and placed. So far a total of 206 fish habitat structures were placed that included 30 artificial structures, 10 catfish condos, 50 catfish nesting tubes, 6 stake beds, 70 wooden fish cribs, and 40 tree/brush piles.

Improving hellbender captive rearing techniques

DNR has established a long-term partnership with Purdue University to captively rear eastern hellbenders for the restoration of the species in the Blue River watershed. In the current phase of the project, researchers are also assessing methods to increase their post-release survival. DFW Staff and researchers at Purdue collaborated to assess the effects of conditioning, release season, and soft release type. Eastern Hellbenders were reared for 18 months in captivity in one of two conditions: a control condition with low-velocity water flow (unconditioned) or a treatment condition with moving water (conditioned) that simulated natural flow velocities at their intended release site. Six treatment groups of 118, 4-yr-old Hellbenders were used to determine the effects of release season (fall or summer), release type (standard soft release or enhanced soft release), and conditioning (unconditioned or conditioned) on days until first movement, release site retention, and survival. We found that treatment groups released into caged cobble beds delayed their first movement and had higher release site retention relative to groups released under caged shelter rocks. Conditioning had a positive effect on survival but only in the treatment group released in the summer. By combining techniques and releasing conditioned individuals in the summer using enhanced soft releases, we increased annual survival of captive-reared Hellbenders from a probability of 0.5 to 0.74. These results provided important information about techniques that can be adopted across captive-rearing programs to help maximize the conservation success of eastern hellbenders.

Targeted Recreational Harvest of White-tailed Deer Reduces Deer-Vehicle Collisions

Fish & wildlife agencies are responsible for managing deer-vehicle collisions (DVCs) to reduce the negative impact of deer on its citizens but are often limited to hunting as their primary management tool. Our goals were to understand the relationships between DVCs, deer behavior, and deer population size, and to test a program that used recreational hunting to reduce DVCs.

Our first goal was to determine how deer density, deer activity levels, and the overlap between activity distributions and vehicle travel times correlated with DVCs. We found higher activity levels and densities and greater overlap between the activity distributions for deer and vehicle travel times in regions with more DVCs. DVCs were predicted well by deer density, the

fraction of time deer spent active during the morning, and the fraction of time deer spent active during the evening.

Our second goal was to address the problem of DVCs using targeted hunting. From 2017-2023, we used deer reduction zones (DRZs) to provide additional opportunities to harvest deer in designated areas. DRZs are 0.5-mile-wide buffers on each side of roads where DVCs were higher than the state average, where the allowable harvest of antlerless deer was increased to nine, and where hunters had an additional opportunity to harvest a second buck through an “earn-a-buck program”. During this 6-year period, DVCs decreased by ca. 20%, demonstrating the effectiveness of using targeted recreational hunting as a management tool to reduce DVCs.

Wildlife Health

Indiana responded to the recent strain of highly pathogenic avian influenza (HPAI). In mid-January, HPAI (H5N1 2.3.4.4 Eurasian lineage) was detected in hunter-harvested ducks in North and South Carolina. The disease was detected in additional locations in eastern North America and was first detected in Indiana in a commercial turkey flock in Dubois County on 09 February 2022. Light Goose Conservation Order participants voluntarily submitted harvested snow geese for testing through at Fish and Wildlife Area’s in southwest Indiana. USDA-APHIS-WS began wild bird sampling in February with redheads (*Aythya americana*). One of those birds was confirmed positive for HPAI. DNR personnel submitted samples throughout the year for opportunistic sampling, consisting of collecting wild birds that died of unknown causes. Positives for HPAI H5 occurred through June, then were undetected until fall. Hunter-harvested waterfowl were sampled during hunting seasons, with multiple detections in October and November. A relatively large (ca. 1000 individuals) die-off of snow geese (*Anser caerulescens*) occurred in Gibson County in November. To date, the following species have tested positive in Indiana: blue-winged teal, American green-winged teal, mallard, gadwall, redhead duck, snow goose, Canada goose, American coot, double-crested cormorant, American white pelican, red-tailed hawk, peregrine falcon, bald eagle, barred owl, great horned owl, and eastern screech owl.

In the summer of 2022, 981 reports of potential epizootic hemorrhagic disease involving 1016 deer were received. 86% of deer tested were found to be positive in 15 of the 17 reported counties. Surveillance for chronic wasting disease continued, no positive cases were discovered.

In December, 17 crows were found dead at the Indiana Statehouse. These crows were found to be infected with a novel Orthoreovirus sp., which is known as the pathogenic agent responsible for the disease Winter Mortality of Crows. This is the first recorded case of this disease in Indiana.

Continued RCPP Participation

DFW staff were successful in securing RCPP funding for grassland habitat restoration and watershed restoration work. The Grasslands for Gamebirds and Songbirds (GGS) program, funded by NRCS & 23 partners, will continue to receive funding thanks to the renewal of the existing GGS RCPP. The renewal provides \$2.6 million in funding to be used for financial and technical assistance for grassland restoration projects on private lands. The project is projected to restore 3,120 acres of grassland habitat with a targeted environmental outcome of increased occupancy and abundance of Northern Bobwhite Quail, Ring-necked Pheasant, Henslow’s Sparrows, and Loggerhead Shrikes.

DFW staff successfully worked with Indiana Department of Agriculture staff to secure RCPP funding for a watershed initiative in the Kankakee River watershed. The primary goal of the project is to address excess water as a resource concern by developing working lands

conservation practices and voluntarily establishing wetlands. DFW staff will help implement the project by assisting with landowner enrollment and providing technical assistance for wildlife-related practices. The project provides \$16 million in total funding for conservation practices. Partner match comes from a broad range of partners including basin development commissions, local non-profits, land trusts, tribal agencies, and agricultural related businesses. Project goals include installing 3,000 acres of new conservation cover, two-miles of two-stage ditches and 800 acres of wetland easements.

Land Acquisition

DFW was without a land acquisition specialist for 9 months of 2022. As a result, many of our acquisition projects were stalled. We managed to close on 181 acres. A 96-acre addition to Wabashiki Fish & Wildlife Area, a 40-acre addition to Little Pigeon Creek Wetland Conservation Area, 2-acre addition (Property Manager's Residence) to Goose Pond Fish & Wildlife Area, and 43 acres of land at the Spring Creek Seeps Nature Preserve. The addition to Spring Creek Seeps provides important buffer to the wetland seeps.

EQIP Update

In federal fiscal year 2022, Indiana's EQIP-Wildlife pools developed 97 new contracts totaling 3,982 acres of new habitat development with a total expenditure of \$1.972 Million. EQIP expenditures in Indiana met the 10% wildlife target mandate in the 2018 Farm Bill.

Private Lands Access

DFW staff continue to seek new opportunities for hunting access on private lands. By leveraging federal funding secured through both a VPA agreement and the GGS RCPP, DFW was able to open 6,344.4 (4,358.4-RCPP, 1986.0-VPA) acres to public hunting during the 2022 hunting season with a grand total of 16,673.3 acres opened to date. Although the program originally started with game bird properties, staff have built the program to include deer, turkey, waterfowl, and small game hunting opportunities. Hunters rate these opportunities very highly and are appreciative of the high-quality opportunities provided by private landowners. Additional funding sources are being pursued and include seeking contributions from NGOs and other conservation organizations.

Increasing Wildlife Passage

In 2022, DFW staff provided technical and financial assistance for 2 dam removal or modification projects. With new funding sources now available, it is anticipated that many more dams will be removed or modified in coming years.

The DFW environmental permitting team has made great strides in working with the State Department of Transportation to allow greater wildlife passage under bridges and culverts across the state. The team provided technical assistance on 131 bridge and culvert projects that either maintained or improved fish and wildlife passage. By working with project designers to incorporate measures such as benches on sloped banks beneath bridges and improved stream substrate design in culverts, connectivity is restored, and roads are made safer.

Lake Michigan Coastal Program

The Lake Michigan Coastal Program (LMCP) contracted with the Northwestern Indiana Regional Planning Commission (NIRPC) to help administer a community needs assessment

focusing on natural hazards and resiliency measures. The multi-year project includes the development of a community self-assessment survey tool, listening sessions, and summary report. The needs assessment will assist the LMCP in identifying, developing, and delivering technical resources to communities to reduce or prevent natural hazard risks. Completing the self-assessment also helps local governments evaluate potential impacts of natural hazards and consider planning and mitigation actions to increase resilience.

The LMCP launched six coastal grant projects in the 2022 funding cycle. Activities largely center on community efforts to restore, preserve, and improve public access to natural areas throughout the Lake Michigan Watershed and reinvigorate outdoor education programs that service residents of the coastal region. These initiatives are financed by pass-through dollars from our federal partners at NOAA combined with cash and/or in-kind matching funds from municipalities, state funds, and non-profit organizations.

Indiana Natural Heritage Data Center

The Heritage Program implemented a Data Request Portal, which allows users to submit data requests and pay invoices electronically, significantly streamlining this process for both users and staff. Over 500 new records were entered into the database and nearly 600 existing element occurrences were updated. We confirmed the presence of *Solidago rupestris* (Rock Goldenrod) in Indiana, which was previously thought to be extirpated from the state. Our botanist and community ecologist updated the subnational (state) conservation status ranks for over 400 plants and natural communities in Indiana.

In addition to our work with plants and natural communities, the Heritage Program continues to work to increase our understanding of the status and distribution of invertebrate species in the State. We completed a multi-year survey to determine the status of Karner blue butterfly in Indiana. We contracted with taxa experts to build an updated checklist of caddisflies in Indiana, which included nine state records. This work will continue into 2023 with the contractors assessing subnational conservation status ranks for these species.

Establishing Social Media Brand Voice

DFW hired a full time Social Media Outreach Specialist to assist the Division in expanding its efforts in outreach to broader audiences. The Social Media Outreach Specialist led efforts to begin revitalizing the division's branding, content, and social media strategies with the goal of increasing public trust via increased online engagement. The Public Engagement team analyzed the specific tone and overall persona of DFW and began the transition to a more whimsical and fun, yet still educational, approach to the work. The team mapped out a "voice matrix" which established 5 objectives for content: (1) accessible and inclusive, (2) understandable, (3) informative and educational, and (5) expressive and whimsical. Guidance was established for the voice transition, including do's and don'ts. An effort was made to expand our social media strategy to include memes, interactive stories, and short form video (reels).

As a result of these efforts, there was an increase in social media metrics, engagement, and morale within their division's staff. Eight times more Instagram followers are being reported per month, Facebook page visits have increased over 20%, and customers are connecting with the team via social media at an increased rate of 124%. The more personable approach has shown a positive impact not only on the public, but on staff as well. Field staff are now more excited to gather and create content (often with creativity, humor, and whimsy).