

Ohio Department of NATURAL RESOURCES

Annual Report. James Zehringer, Director

Fiscal Year 2016 — July 30, 2015 – June 30, 2016

ODNR SNAPSHOT

The Ohio Department of Natural Resources (ODNR) is a diverse agency that oversees the recreational pursuits of millions of visitors each year at our state parks, wildlife areas and waterways while also regulating the development and use of Ohio's vast allotment of natural resources including natural gas, coal and timber, that annually supply billions of dollars of goods into Ohio's economy.

Each of these duties is carried out in order to help ensure that Ohioans are able to enjoy the very best their state has to offer. Whether it is paddling down one of Ohio's beautiful scenic rivers or turning up the heat to make sure the kids are nice and warm on a cold February morning, these are the everyday things that go unnoticed that we are able to help provide. While the responsibility is immense, the ability to help Ohio succeed in so many different areas makes each day and every task important. We will continue our work toward ensuring that Ohioans are able to pursue the best outdoor recreational opportunities in the country and can share in the economic success that comes with responsible development of our state's valuable resources.









RECREATIONAL PURSUITS

Ohio is blessed with some of the most beautiful scenery in the nation, from Lake Erie to the Ohio River and from prairie lands to the Appalachian foothills. ODNR offers recreational opportunities showcasing the state's natural wonders while providing visitors with an enjoyable experience in a safe setting.









Ohio State Parks

Ohio is proud to be one of only seven states in the nation to offer free admission and parking to all 74 of our state parks. Ohio State Parks provide more than 1,000 miles of woodland trails and 64 lakes where visitors can fish, swim, bike, hunt, boat, hike or simply spend time outdoors.

Parks staff and volunteers are charged with maintaining and managing more than 174,000 acres of park lands and waters for the enjoyment of our visitors, and there are state parks in 59 of Ohio's 88 counties. Last year collectively, Ohio State Park campgrounds, cabins and lodges received a total of 2.4 million overnight visits. By continuing to improve our state parks system, we have the opportunity to showcase our facilities and draw more tourism dollars into Ohio.

Ohio State Parks received an unprecedented $88.5 million for capital improvements in Governor John R. Kasich's 2014 capital budget. This historic investment has allowed work to begin to transform our facilities to match the natural beauty that defines Ohio State Parks statewide. These funds have not been used to expand Ohio State Parks, instead, they are serving as an investment toward improving and modernizing our parks for the enjoyment of every visitor.



Since this historic initial infusion of capital funds, Ohio State Parks has spent two years designing, modernizing, repairing and refurbishing various facilities throughout the state park system. The work was prioritized for public safety, necessity to maintain operation, condition of facility and visitor feedback received via an online survey. The past year has been spent finishing the identified projects and unveiling them for public use.

More than 50 ODNR properties were identified for improvement projects that have been funded by this single capital investment. The full list of projects is maintained, and progress tracked, at parks.ohiodnr.gov/improvementprojects.

Ohio State Parks and the ODNR Division of Natural Areas and Preserves have partnered with the ODNR Division of Watercraft to streamline functions of the three divisions. Senate Bill 293 has merged the divisions of Watercraft and Parks into a single entity that will be better able to serve boaters and park visitors alike. By consolidating these divisions, we are improving customer service, driving more money to support the customers and providing greater protections to our visitors through our law enforcement officers.

The main benefit of this merger between Parks and Watercraft is that the same emphasis will now be placed on boating amenities that had previously been focused mainly on amenities that serviced off-water activities, such as hiking and camping. We have found that boaters and campers who use our amenities are often one and the same. Formerly, boat ramps in state parks were not funded through the ODNR Division of Watercraft. Instead, state parks utilized park operating and capital dollars to maintain all amenities within the park, which could often lower the priority of a boat ramp improvement. Now, boating dollars

can be used more often to address boating amenities within state parks, and more park dollars will be available for projects focused on the upkeep of the parks, which will benefit not only boaters, but every visitor to our state parks.



Watercraft and Ohio State Parks have merged 10 field offices into building space located within state parks where they share office resources, improved customer services, increased office hours and crossed-trained employees. In addition to sharing office space, central office staff merged to decrease duplicative efforts, such as processing payments and payroll functions, customer service initiatives, etc. These common sense changes have already saved more than $1.3 million.

Consolidation of these divisions will not only offer improved services and cost savings, but also enable ODNR law enforcement to provide greater protection to visitors in our state parks, natural areas, rivers and lakes. Officers will be cross-trained, reducing training costs and improving officer response and safety efforts across state properties. Consolidating these divisions will deliver greater efficiencies and ultimately drive more funding to support boaters, park visitors and others who enjoy Ohio's outdoors.

Natural Areas and Preserves

Ohio's 136 state nature preserves showcase the state's natural diversity, from old growth forest, bogs, fens and prairies to barrens, sand dunes and wetlands.

Funding from Ohio's income tax donation program for Ohio's State Nature Preserves supports improvements to trails, parking and signage at state nature preserves to increase accessibility. Funding also supports ecological management activities. Statewide, staff and volunteers contributed 4,000 hours of labor to controlling more than 25 different species of invasive plants. Public programming on nature education increased in Fiscal Year (FY) 2016. Staff presented nearly 150 programs to nearly 4,300 attendees statewide.

In FY 2016, many improvements were made, including a new 1.3-mile trail and footbridge at Chaparral Prairie State Nature Preserve and a new parking lot at Christmas Rocks State Nature Preserve with funding from the Ohio Department of Transportation. Conservation easements are also vital to protecting preserves. Recent additions include a 75-acre tract in Logan County containing mature woods and numerous Category 3 wetlands; a tract in Hocking County containing mature hardwoods and significant geological formations; and a 70-acre tract adjacent to Cooperrider-Kent Bog.

The U.S. Fish and Wildlife Service (USFWS) awarded Ohio State Nature Preserves more than $20,000 to update the status of the six federally listed plant species and two potential candidate species. The study showed that the Lakeside daisy may need a status upgrade. The remaining species were found to be stable in Ohio



Watercraft

The ODNR Division of Watercraft works with local, state and federal agencies along with conservancy districts to provide funding assistance through the Waterways Safety Fund for recreational boating public access projects statewide.

This work enables Ohio boaters to enjoy free parking and boat launch facilities at hundreds of public sites statewide, including most of Ohio's state parks. The recently passed Senate Bill 293, which combined Watercraft and Ohio State Parks, will enhance efforts to maintain access points for boaters statewide, allowing Ohioans to continue boating, paddling, fishing and enjoying Ohio's waterways.

ODNR officers patrol and provide emergency response for 2.29 million acres of Lake Erie,



451 miles of the Ohio River and many of Ohio's inland lakes and rivers. Watercraft also registers and inspects recreational vessels across the state.

For the seventh consecutive year, Ohio is in the top 10 states for the number of registered boats. In 2015, Ohio registered 474,601 recreational boats, an increase of 14,324.

Paddlesports continue to rapidly gain popularity in Ohio, with total registrations reaching 161,649 canoes and kayaks This compares to 67,880 such vessels registered in the state 10 years ago and marks an increase of 21,215 from just last year.

In 2015, the ODNR Division of Watercraft returned more than $14,883,472 to the boaters and boating communities in the form of grants for boating safety education, marine patrol, dredging and facility development or improvements.



Watercraft staff offered a number of programs to help encourage growth in boating, fishing, hunting and other outdoor recreational activities around the state. Many of these programs were offered in partnership with Ohio State Parks, the ODNR Division of Wildlife and other boating partners. These opportunities allow Ohioans to enjoy and experience new water sport activities. Through events and programs like Paddle Palooza, Paddle Ohio and Ohio Women's Outdoor Adventures, ODNR staff

are able to introduce paddlesports and other on water activities to individuals and groups across the state.

By offering additional opportunities for people to experience and enjoy Ohio's waterways in a safe, educational setting, the division hopes to increase participation in water sports while increasing safety on and around the water.

Wildlife

Ohio offers world-class opportunities for fishing, hunting, trapping, bird watching, wildlife viewing and other forms of fish and wildlife recreation in 144 state wildlife areas, encompassing 195,000 acres of public land.

The ODNR Division of Wildlife manages these lands and helps Ohio landowners conserve and improve fish and wildlife resources and their habitats. The division also manages Ohio's fisheries, which cover 124,000 acres of inland water, 7,000 miles of streams, 2.29 million acres of Lake Erie and 451 miles of the Ohio River.

Fish and wildlife management and research consists of projects that affect fish and wildlife populations, their habitats and the Ohioans that benefit from a healthy, wild landscape. Projects include population and habitat management, fish and wildlife resource research and fish and wildlife recreation promotion. The ODNR Division of Wildlife offers a variety of educational programs to increase the skills, knowledge and participation of those interested in wildlife.

Lake Erie offers excellent fishing opportunities for walleye, yellow perch and smallmouth bass. Angler success rates for walleye were among the highest ever. Lake Erie had good hatches for both walleye and yellow perch, and the future continues to be bright for Ohio sport fishing. Some inland lakes and rivers were the beneficiaries of the work being done in Ohio's six state fish hatcheries. These operations stocked more than 55 million sport fish in public waters, including walleye, saugeye, yellow perch, steelhead, rainbow trout, brown trout, muskellunge, channel catfish, blue catfish and hybrid-striped bass, providing opportunities for more than 1.3 million Ohio anglers.

Wildlife partnered with other experts in various fields to address health concerns within wildlife populations in Ohio and across the country. The department partnered with the Ohio Department of Agriculture (ODA), The Ohio State University (OSU), the United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services and the poultry industry to conduct avian influenza surveillance, education and prevention after the discovery of Highly Pathogenic Avian Flu in the Midwest. Wildlife biologists and staff also monitored Ohio's wild deer herd, implementing an intense Chronic Wasting Disease (CWD) sampling effort in the newly established Deer Surveillance Area. The division collected more than 600 hunter-harvested samples to be tested for CWD during the 2015-2016 deer season. No CWD has been detected in wild deer in Ohio.

Efforts to protect and promote the health of wildlife populations continued. In addition to creating pollinator and monarch habitat, an awareness campaign was launched to highlight the plight of these species. This effort was created in response to a monarch listing petition, and Wildlife was joined in this effort by the USFWS, Ohio Department of Transportation, American Electric Power, OSU, USDA and Pheasants Forever/Quail Forever. A monarch butterfly SAFE proposal

was submitted, covering 43 counties, with an enrollment of 30,000 acres to enhance habitat for the monarch butterfly and pollinators. In



addition to this effort, the division has sold more than 1 million Ohio Wetland Habitat Stamps since the program's inception in 1982. Since that time, Wetland Habitat Stamps have raised $10.4 million to restore and protect 40,000 wetland acres in Ohio.

Forestry

During FY 2016, ODNR obtained independent review and recertification for all 21 state forests managed by the ODNR Division of Forestry after extensive audits.

The ODNR Division of Forestry operates and maintains Ohio's 21 state forests, encompassing nearly 200,000 acres. Ohio's state forests offer visitors more than 350 miles of back country bridle trails, more than 80 miles of backpack trails, many day-use hiking and mountain biking trails, as well as camping, hunting, wildlife viewing and gathering places. Four designated all-purpose vehicle areas on state forest land are open for off-road four-wheeler and motorcycle riding.

During FY 2016, ODNR obtained independent review and recertification for all 21 state forests managed by the ODNR Division of Forestry after extensive audits. State forests were recertified as meeting the standards of the Forest Stewardship Council ® (FSC®) and Sustainable Forestry Initiative (SFI). Surveillance audits will be conducted over the next four years to maintain the certification. The 21 state forests are the only dual-certified forests in Ohio. The harvesting, milling and manufacture of wood into paper, furniture and wood products employs more than 118,000 Ohioans and contributes $22 billion to the state's economy. Additionally, in FY 2016, the ODNR Division of Forestry distributed more than $2 million from state forest timber sales to 15 rural Ohio school districts and their corresponding counties and townships.



The ODNR Division of Forestry administers a forest fire protection area of more than 8.6 million acres in southern and eastern Ohio. In FY 2016, 346 wildfires were reported over 859 acres, less than the average amount, mostly due to weather. The division trained 563 firefighters, mostly from volunteer departments and distributed $41,250 to departments for wildfire reporting and suppression efforts. In addition, more than 20 departments received wildland fire protective equipment. The division supported the national wildfire effort by sending more than 70 firefighters to the western United States from July through September 2015. Ohio firefighters assisted in Alaska,

California, Oregon, Idaho and Washington in one of the worst wildfire seasons in recent memory. Additionally, Ohio sent firefighters to assist Pennsylvania in April 2016 since the Pennsylvania Bureau of Forestry requested the division's assistance in suppressing the 16-Mile Fire in Pennsylvania. This was the first use of the Middle Atlantic Interstate Forest Fire Protection Compact for direct fire suppression in at least a generation. The division sent 10 firefighters and two wildland fire engines for the seven-day assignment. It was the largest wildfire Pennsylvania has had since 1991.

To help fight wildfires here at home and protect Ohioans, the division utilized capital funding to purchase seven crawler dozers, the first dozer fleet upgrade since 2001. All machines are specially equipped with wildfire suppression packages to protect the hydraulics and electronics from wildfire damage. When not in use for fire management, the dozers will be used for trail maintenance and other state forest operational needs.

The ODNR Division of Forestry's Service Forestry program is the primary source of forestry assistance for private woodland owners in the state. In FY 2016, the division's 19 service foresters provided one-on-one assistance to 1,816 Ohio landowners, helping them prepare for timber sales, create habitat for forest wildlife, plant trees for future forests and better understand the many benefits that their forests provide. Service foresters also assist landowners by developing woodland stewardship management plans, which include descriptions and maps of their woodlands, as well as recommendations and timelines for their woodland management activities. In FY 2016, service foresters wrote 392 plans covering 28,534 acres of forest land, bringing the total area of private woodlands in Ohio under stewardship plans to 322,113 acres.

In FY 2016, the ODNR Division of Forestry's Urban Forestry program awarded more than $132,000 in tree planting funds to nine communities through the Lake Erie Watershed Canopy Replacement grant program. The pass-through funds from the U.S. Forest Service's Great Lakes Restoration Initiative helped to replace tree canopy lost from the emerald ash borer in the Cuyahoga and Black River Areas of Concern. The division's urban foresters also continued to provide formal training for Ohio Tree Commissions and municipal staff through the national award-winning Tree Commission Academy (TCA). TCA embodies the "teach people to fish" philosophy by empowering communities to build sustainable urban forestry programs from within. In FY 2016, the urban foresters conducted 76 TCA classes for 290 students from 131 communities. Since the inception of the academy in 2009, 911 citizens in 248 different communities have registered for the program, impacting more than 4.6 million Ohioans.

The ODNR Division of Forestry's Forest Health Program conducts surveys and suppression activities for various forest health threats, including Asian longhorned beetle, hemlock woolly adelgid, emerald ash borer and non-native, invasive plants. Thousand cankers disease of walnut is a newly described disease complex involving a fungus, Geosmithia morbida, and an insect that vectors the fungus, the walnut twig beetle; both are native to southwestern North America. The disease causes decline in species in the genus Juglans, including black walnut, an ecologically and economically important tree species in Ohio. In late 2012, walnut twig beetle (WTB) was caught in ODNR Division of Forestry traps in Butler County. The following year, the Geosmithia fungus was confirmed from several trees there. No WTB have been detected in ODNR Division of Forestry traps since 2013. Monitoring for WTB will continue throughout the state.

REGULATORY EFFORTS

ODNR daily works to provide consistent, comprehensive and clear regulations which allow companies and business owners to succeed in Ohio, while not allowing industry to occur at the expense of public health and safety or the environment. We employ, train and equip our regulators statewide with the tools needed to effectively enforce our regulations. These committed employees work diligently to ensure Ohio's laws and rules are current and reflect what is occurring in our state.



Oil and Gas Resources Management

The ODNR Division of Oil and Gas Resources Management regulates Ohio's oil and natural gas industry by protecting Ohioans and our environment while ensuring that the state's natural resources are managed properly. The division oversees a number of aspects of the oil and natural gas industry: well pad construction, permitting, drilling, completion and production of oil and natural gas; the disposal of produced fluids and brine; and the plugging of wells and reclamation of well sites after production ends.

Production and Permitting

The Utica/Point Pleasant Shale play continued to produce record volumes of oil and natural gas in calendar year 2015. Horizontal shale wells totaled 21,985,351 barrels of oil and 954,748,118 Mcf of natural gas. Operators of horizontal wells submit production reports on a quarterly basis. Production volumes rose significantly in each quarter of 2015.

	2015 Q1	2015 Q2	2015 Q3	2015 Q4	Total
Barrels of Oil	4,432,188	5,594,633	5,707,104	6,251,426	21,985,351
Mcf of Gas	183,585,251	221,964,869	246,678,114	302,519,884	954,748,118

Production in 2015 far exceeded production in 2014 as oil production grew 99.9 percent and natural gas production grew 110.6 percent. Natural gas production in Ohio nearly meets the state's consumptive demand, providing an efficient source for home heating, electric generation and manufacturing feedstock.

	2014 (Shale)	2015 (Shale)	Increase
Barrels of Oil	10,999,162	21,985,351	99.9%
Mcf of Gas	452,866,564	954,748,118	110.8%

At the end of 2015, a total of 2,158 horizontal shale wells targeting the Utica/Point Pleasant or Marcellus Shale formations were permitted, with 1,695 wells drilled and 1,141 wells capable of production. An additional 40,000 conventional wells also produce oil and natural gas across nearly every county in the state.

Division Activities

The continued specialization of division sections and programs has increased efficiency in a number of regulatory areas. The Orphan Well Program continues to plug abandoned oil and gas wells that would otherwise pose a hazard to individuals and the environment. Facilities that treat, store or otherwise handle oilfield wastes are reviewed and inspected by an expanded section of staff engineers. Additionally, the division's surety and bonding section conducted a comprehensive audit of operators' insurance and bonding information to ensure compliance.

A majority of the division's employees are field inspectors who work and live in the counties and communities where oil and gas is produced. County-based inspectors are readily available for frequent inspections and construction oversight, while protecting their own local communities. More than 25,000 inspections were conducted in 2015, including the scheduled witnessing of key

construction phases and unscheduled assessments.

An Emergency Operations and Response team was fully mobilized in FY 2016 and is tasked with responding to oilfield incidents 24 hours a day, seven days a week. This team works alongside local responders, conducting trainings, coordinating state, local and private emergency resources and developing protocols to prevent future incidents.

The division's Underground Injection Control (UIC) program received high praise from the U.S. Environmental Protection Agency (U.S. EPA) following an audit under the primacy agreement between the two entities. The



UIC program oversees the permitting and operation of Class II injection wells, which allow for the safe disposal of produced water, or brine. The U.S. EPA report found that the UIC program is, "strong in several areas, including permitting, inspections and resolving violations found during inspections." The routine audit found once again that Ohio's regulations and inspection standards for injection wells far exceed federal regulations. The UIC program also oversees Class III salt-solution mining wells, which produce saturated brine from salt deposits, and are used to make table salt, water softener salt and salt blocks.

Additionally, leaders from Ohio participated in the Interstate Oil and Gas Compact Commission and Groundwater Protection Council StatesFirst induced seismicity initiative, collaborating data and expertise to craft regulatory decision-making tools. Ohio continues to operate a robust seismic monitoring network across Ohio, providing real-time data needed to make critical decisions and develop policy in the area of induced seismicity.

Regulatory agility remains crucial as Ohio continues to be a national leader in setting standards in oil and gas regulations. In July 2015, the division implemented new comprehensive rules regulating the construction of horizontal well pad sites. These stringent standards ensure that well pads provide a safe founding for drilling rigs and production facilities throughout the operational life of the well, emphasizing public safety and environmental protection.

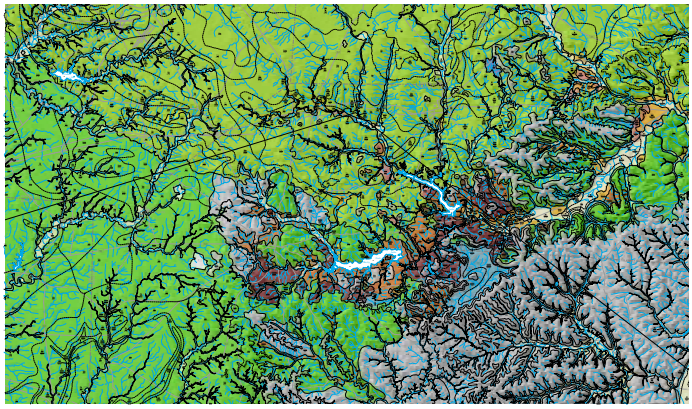
Geological Survey

As the oldest natural resources agency in Ohio, the ODNR Division of Geological Survey has researched and reported on the state's complex geology since 1837. More than 175 years of information and data are archived on the state's wealth of energy, water and mineral resources.

This record benefits Ohio citizens and industry by supporting environmental protections, proper land use and planning, mitigation of geologic hazards, regulation of fossil fuel and mineral extraction, academic research as well as recreational and educational activities.

The division's mission—to provide geological information for the responsible use of Ohio's natural resources—is accomplished by data collection, analyses, mapping and publication

of scientific investigations. The division's collective expertise spans geological research including glacial deposits, mineral aggregates, salt, coal, oil and gas, seismicity and the Lake Erie shoreline. These specialists rely on a wide array of tools, including geophysical logs, seismic data, geographic and spatial information, mineral production data, drill-hole cores and a range of other data types.



Current and recently completed projects by the Mapping Group include:

- U.S. Geological Survey (USGS) StateMap projects
- Great Lakes Geologic Mapping Coalition (GLMC) surficial and karst mapping projects
- Coal resource grant funded by the Ohio Coal Development Office (OCDO)
- 2014 Report on Ohio Mineral Industries, completed in November 2015.
- USGS-funded data preservation grant in which approximately 2,500 historical 35mm slides are being scanned into a digital format and metadata is being compiled into a database.

The Lake Erie Group of the division is preparing for the next Coastal Erosion Area (CEA) study.

The Ohio Seismic Network (OhioSeis) has expanded its network of seismometers with the installation of instruments in Henry and Scioto counties, in exceptionally remote, quiet locations. Further such installations are planned.

The Energy Resources Group worked on the following projects: Devonian shale source rock mapping, carbon sequestration as well as subsurface stratigraphic and structural studies. The group wrote field trip guides and submitted research papers for internal and external publication. Collaborative research is being conducted with Ohio universities including The Ohio State University, Miami University, Wright State University and University of Cincinnati.

The information published in paper and electronic formats is available for state and federal regulators, industry, consultants and the general public from which to foster the wisest use of Ohio's abundant natural resources. Public outreach efforts have expanded significantly in recent years, as this information is conveyed to stakeholders. The division regularly makes presentations to local schools; offers tours of the GeoWalk at the Ohio State Fair; hosts workshops, tours and open houses at our core repository; and participates with rock and mineral shows.

Mineral Resources Management

The ODNR Division of Mineral Resources Management provides for the safe and environmentally sound development and restoration of coal and industrial minerals extraction sites. Multiple programs address the environmental and safety aspects related to coal and industrial minerals mining.

Program and support services include

permitting, hydrology, bonding, inspection and enforcement, abandoned mine land, engineering and design services, mine safety, data and records management, geographic information system (GIS) and central services support. Expertise is provided by a professional and seasoned staff of geologists, environmental specialists, engineers, blasting specialists, soil scientists, hydrologists, archaeologists, hydrogeologists, inspectors, GIS and program managers. Division staff works diligently to maintain a high standard of regulatory effectiveness.

Industrial Minerals (IM) Permitting and Regulatory Program

Ohio is a major producer of non-fuel minerals, also known as industrial minerals. More than 100 million tons of non-fuel industrial minerals were estimated to have been mined in 2015 throughout the state.

The industrial minerals produced in Ohio, listed in order of highest to lowest per ton production include:

- limestone and dolomite;
- sand and gravel;
- salt;
- sandstone and conglomerate;
- shale; and
- clay.

During the year, the division issued eight new IM permits on 638 acres and 14 amendments on 398 acres. Staff reviewed and approved 62 modifications to permits and one permit renewal. Staff also responded to 26 formal complaints regarding mining operations during the year. Mineral resource inspectors conducted more than 2,000 inspections on IM mine sites.

Abandoned Mine Land (AML) Program

The AML staff's work resulted in the following accomplishments:

- Reclamation of 5,360 feet of dangerous highwalls;
- Stabilization of 4 acres of landslides and seepage;
- Sealing of two mine portals and vertical openings;
- Restoration of nearly 5 acres of clogged streams;
- Contracted 17 projects; and
- Designed and began work on $4.3 million in projects and completed $4.07 million in final reclamation.



Remining

The division recognizes there are thousands of acres of abandoned mined lands in need of reclamation that still contain valuable coal resources. With advancements in mining technologies and numerous recent federal and state incentives for active coal remining, the division worked with the industry as well as state and federal partners during FY 2016 to encourage coal remining permits. During 2015, the division successfully approved and issued six new and adjacent area permits for remining of previously disturbed areas, which included elimination of 921 acres of pre-law water-filled pit impoundments and mine spoils, as well as 44,338 linear feet of dangerous unreclaimed highwalls. This adds to the long list of permits where pre-law mining

sites in Ohio are being reclaimed by the mining industry through remining, making nearly unusable land productive again.

Mine Safety Program

Division Surface Mine Safety Inspectors trained 5,886 miners in Annual Refresher Training (ART), first aid and CPR as required by provisions of the Mine Act. During the year, Mine Rescue Operations Coordinators also trained 1,400 miners in mine rescue, and inspection staff trained 20 miners in electrical ART. In 2015, mine safety certification staff conducted examinations for 198 miners seeking required certifications for work in key mining positions in Ohio's underground and surface mines. This includes the certifications of mine foremen, coal mine electricians and mine medical responders. Of those examined, 167 earned certification.

Coal Permitting and Regulatory Program

During the past year, permitting staff issued seven new mining permits, eight adjacent area permits and one exploration permit authorizing coal mining activities on 17,252 acres (2,048 surface acres and 15,171 underground acres, as well as 33 acres for exploration). The program also processed a total of 231 releases of performance security on coal mining operations for partial reclamation and complete reclamation releases on 10,901 acres, as well as excess bond releases where performance security exceeded the outstanding liability.

During the past year, Coal Mineral Resource Inspectors:

- conducted 2,382 coal mining operation inspections;
- responded to 27 public complaints on coal mining operations;
- conducted 210 bond release inspections recommending approval on 194 reclamation segments totaling 10,595 acres; and
- conducted 27 inspection releases on 306 acres re-affected by other regulated activities.

Water Resources

Amended Substitute House Bill 64 of the 131st General Assembly specified that ODNR's soil and water conservation programs move to the Ohio Department of Agriculture (ODA) by Jan. 1, 2016.

This comprehensive approach has resulted in the consolidation of all available authority, programs, technical staff, funding and grants related to agricultural nutrients and soil conservation issues on Ohio's farms at one agency: ODA. The following changes occurred to the ODNR Division of Soil and Water Resources:

- All programs and staff related to soil and water conservation have been moved to ODA as the new Division of Soil and Water Conservation.
- All programs and staff related to storm water issues have been moved to Ohio EPA's Storm Water Management Program.
- All programs and staff related to silviculture have been moved to the ODNR Division of Forestry.

The four remaining water resource related programs and staff (which were formerly part of the ODNR Division of Soil and Water Resources) have now become the department's new Division of Water Resources.

The ODNR Division of Water Resources provides leadership, technical assistance and quantitative regulatory oversight of Ohio's

water resources. This enables Ohioans to better plan and design water-related projects and to be well prepared and protected against natural and man-made water quantity related disasters. These programs include the collection and dissemination of our state's water resources data; safety inspection and construction of dams; and proper management of Ohio's floodplains. The division provides technical assistance, data and regulatory review through the implementation of programs and educational outreach with local and state officials, consultants, contractors, private landowners and many others.

Dam Safety Program



The Dam Safety Program inspected more than 320 dams and responded to several dam safety emergencies. The division approved more than 30 emergency action plans for both publicly- and privately-owned dams and supported risk reduction measures at ODNR-owned dams. The Dam Safety Program completed a multi-year outreach project of briefing all 88 county emergency management agencies on dam safety.

Water Inventory and Planning Program

The Water Inventory and Planning Program installed solar panels on 31 water level observation wells with difficult access. Additionally, 139 observation wells were serviced on a quarterly basis, one additional observation well was added and two existing observation wells were converted to real-time data reporting (making the total in Ohio now 14). The Monthly Water Inventory Reports were published, including information on ground water levels, precipitation, stream flow and reservoir storage. The Lake Erie basin water withdrawal, consumptive use and diversion data were compiled and submitted to the Great Lakes Commission while division staff planned and conducted a Water Conservation Education Workshop for 30 educators as part of Ohio's Water Conservation and Efficiency Program.

Ground Water Mapping and Technical Assistance Program

The Ground Water Mapping and Technical Assistance Program mapped the direction of ground water flow in three counties in southwest Ohio (bringing the total to 57 completed counties) and assisted the ODNR Division of Mineral Resources Management with ground water model design or review of six mining sites. Staff added more than 5,600 water well records and more than 4,600 well sealing reports to the state database, provided assistance for ground water information to more than 1,600 customers and (through the website search functions) provided ground water data to more than 57,000 customers who viewed more than 340,000 well records.

Floodplain Management Program

The Floodplain Management Program responded to numerous inquiries concerning the National Flood Insurance Program (NFIP) and nearly 3,800 requests for technical assistance and flood recovery support throughout a year that saw frequent flood and severe storm advisories, watches and warnings statewide (seven lives were lost to flooding). The program also assisted 750 Ohio communities in gaining and maintaining eligibility for participation in the

NFIP by conducting 23 community visits, 23 workshops and 15 environmental and/or engineering reviews.

Engineering

Significant rehabilitation efforts were completed at Buckeye Lake Dam, Phase 1 and Lake White Dam during FY 2016. Total project costs for these dams were approximately $75.3 million.

Phase 1 at Buckeye Lake Dam included placement of the stability berm and seepage barrier or cutoff wall, which was completed prior to the June deadline. The work at Lake White included a new lake drain, overtopping protection, seepage cutoff at the principal spillway and relocation of Crooked Creek.

Construction continuing into FY 17 will be for the following dams: Long Lake, Mt. Gilead Lower and Upper, Indian Lake and Lake Loramie. Total costs for these projects are estimated at about $27.6 million.

- Final design in process for improvements to other Class I dams, including Blue



Rock, Lake Logan, Hargus Lake (A.W. Marion State Park), Lake Milton, Portage Lakes East Reservoir and Salt Fork.

- Final design to decommission for several Class I impoundments at Jockey Hollow Wildlife Area.
- Initiate the assessment of the Muskingum River Locks and Dams system. This locks and dams system is the oldest and still operable in the country. The system is also listed in the National Register of Historical Places.
- Other related risk reduction measures: Completed final draft of the Emergency Action Plans for Class I dams.

Coastal Management

In FY 2016, the ODNR Office of Coastal Management began implementing the federally approved 2016-2020 Ohio Coastal Program Enhancement Plan. This year, progress was made in initiatives including building resilient shorelines and assessing Ohio's coastal wetlands in cooperation with the University of Toledo and Bowling Green State University.

In partnership with Kent State University and Heidelberg University, research began at the ODNR Division of Wildlife's Old Woman Creek National Estuarine Research Reserve



to fully understand how wetlands process nutrient runoff, as well as in understanding how wetland restoration will improve Lake Erie's water quality. In the Western Basin

of Lake Erie, identification began on how potentially restorable wetlands can be connected to maximize nutrient processing and sediment trapping functions, as well as how dredged material can be used to restore/enhance nearshore habitats.

In continuing ODNR's partnership with Ohio EPA to work on Healthy Lake Erie funded grants, and implement the state's dredged



materials management and beneficial use program, multiple projects continued. The Cleveland-Cuyahoga County Port Authority finalized stage one construction of a sediment recycling facility where recycled dredged materials were harvested and used in various industrial applications. In June 2016, construction was finalized on the Toledo-Lucas County Port Authority's Great Lakes Dredging Center of Innovation at Riverside. This facility will allow researchers to develop cost-effective methods to dewater dredged material and use it to raise agricultural land's elevation, then return the land to crop production. Finally, Coastal Management worked with local officials and businesses to better understand some of the opportunities available to support Ohio's economy and improve the environment by reusing the 1.5 million cubic yards of soils that are annually dredged from Ohio's eight commercial navigation harbors.

Coastal engineers continued to provide on-site technical assistance to lakefront property owners, consultants and local community representatives to help them understand site-specific options for mitigating erosion and/or adding lake access from the upland. This service expedites regulatory review and authorization, reduces construction costs and results in a structure that better balances the use and preservation of Ohio's finite coastal resources.

Law Enforcement

ODNR conducted classes in civilian response to active threats for the Ohio Department of Rehabilitation and Correction (ODRC), and ODNR is available through the Ohio Department of Administrative Services (ODAS) to provide this class to any other state agency. The ODNR Office of Law Enforcement has conducted this training at the department's Fountain Square facility in Columbus and statewide. The civilian response to active threat has also been incorporated into ODNR's new employee orientation program. The office has presented this training to more than 550 ODNR and ODRC employees, and the office continues to provide this course as requested. We are listed with ODAS as a provider of active threat training to other state and local government agencies.