



Ohio Department of Natural Resources

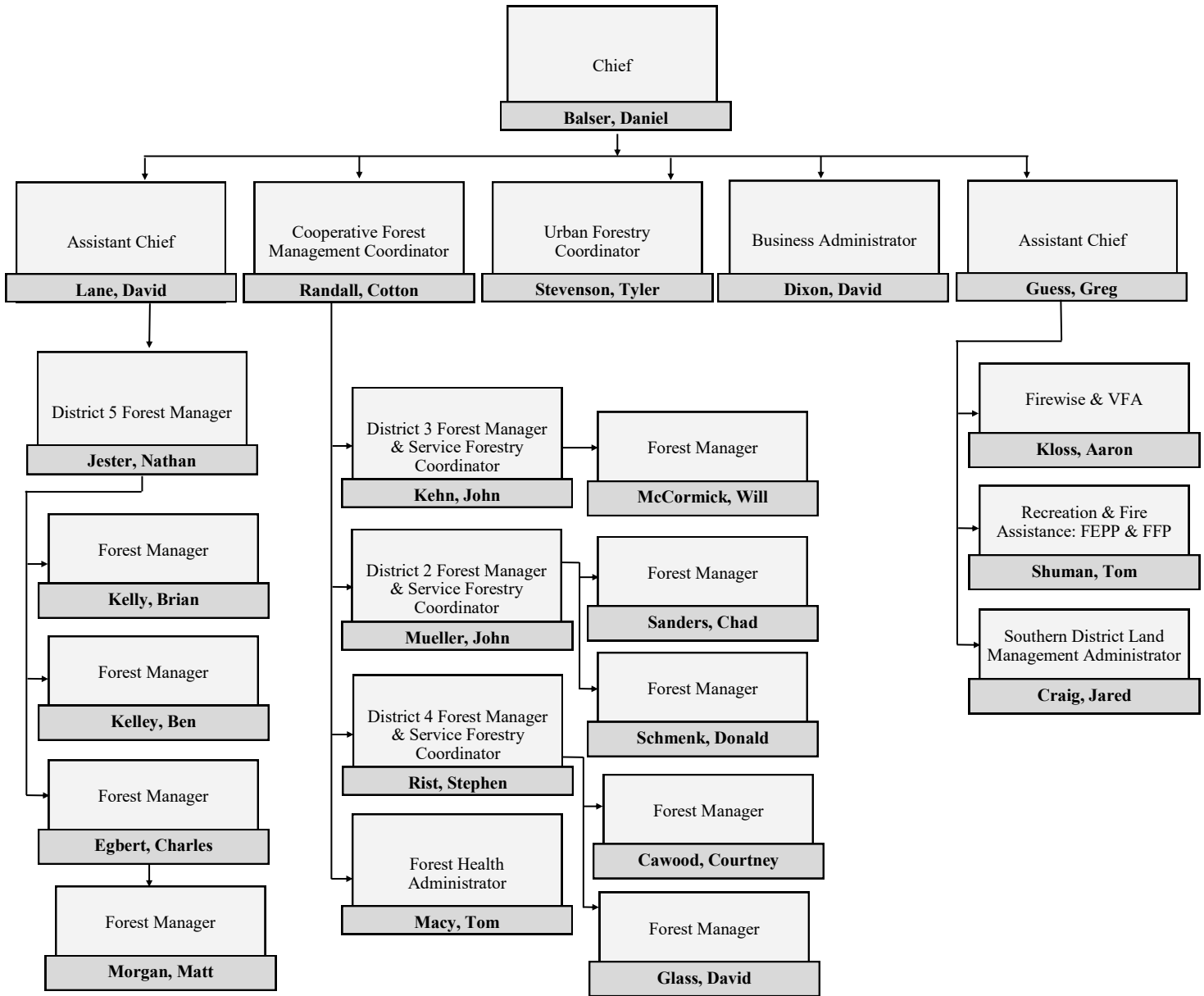
Division of Forestry

FY 2019

Annual Report



FY2019 ODNR Division of Forestry Managerial Table of Organization



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Division of Forestry
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INFORMATION & EDUCATION PROGRAM

The Ohio Department of Natural Resources (ODNR) Division of Forestry's Information & Education program provides the public with opportunities to learn about and experience the best that the Division and Ohio's forests have to offer.

For example, in October 2018 the ODNR Division of Forestry's Zaleski State Forest staff hosted the Buckeye Hero Hunt with help from other Division and department staff members, as well as dozens of volunteers. The Division of Forestry partnered with the ODNR Divisions of Wildlife and Parks & Watercraft to provide this guided archery hunt event for disabled American veterans from Ohio to hunt white-tailed deer. Twenty disabled veterans participated and 20 deer (16 antlerless and 4 bucks) were harvested over the weekend.

Following are some more of the opportunities offered to the public this year:

- Four Issues of *The Ohio Woodland Journal*: 3400 copies of each issue mailed or distributed
- Newsletters, workshops, videos, Smokey Bear messaging, Project Learning Tree-Ohio activities, and educational presentations developed and presented by ODNR Division of Forestry's professional foresters
- Sample of events hosted by and/or with participation from ODNR Division of Forestry:
 - ◊ Thunder in the Hills wild turkey hunt @ Pike State Forest and the NWTf Wheelin' Sportsmen Turkey Hunt @ Blue Rock State Forest: the ODNR Division of Forestry's Pike and Blue Rock state forest staff hosted these hunts with help from other Division and department staff members, and many volunteers. The hunts were organized for disabled hunters to enjoy the outdoors while hunting for wild turkey. Fourteen hunters participated and 1 turkey was taken during the hunt at Pike State Forest; 23 hunters participated and 3 turkeys were taken during the hunt at Blue Rock State Forest.
 - ◊ Tree City U.S.A programs (see Urban Forestry Program section on page 3)
 - ◊ ODNR Division of Forestry's Teacher Field Days @ Vinton Furnace State Forest: 25 teachers
 - ◊ Conservation Day in Crawford County for 5th graders
 - ◊ Camp Canopy: 98 campers; 42 instructors; 12 counselors (including 2 camp staff directors)
 - ◊ Ohio State Fair
 - ◊ Farm Science Review
 - ◊ Gold Star Mother's Club Annual Pilgrimage, Ohio Memorial Shrine: approximately 100 attendees
 - ◊ ODNR Division of Forestry's Miami Trace 3rd Grade Forestry & Wildlife Field Day: 180 3rd graders
 - ◊ Muskingum River Woodland Interest Group (MRWIG) hosted 2nd Annual Field Day (50 attendees), Annual Banquet (26 attendees), January and March meetings (total 41 attendees)
 - ◊ Paul Bunyan Show
 - ◊ ODNR Division of Forestry's Forest of Honor
 - ◊ Hocking State Forest Fall Color Tour: Approximately 200 people attended this event, which included tractor-drawn wagon rides through Hocking State Forest, learning about forestry and wildlife, enjoying bean soup & cornbread, and learning from many displays and presentations on forestry and wildlife issues in Ohio, all in the midst of the beautiful autumn outdoors of Hocking State Forest.
 - ◊ ODNR Division of Forestry's Pike County 5th Graders Forestry Field Day: approximately 420 participants, including 348 5th grade students
 - ◊ Tree Farm tour for Tree Farmer of the Year: 80 attendees
 - ◊ A Day in the Woods — 2nd Friday Series; calendar year 2019: 9 programs April-Nov. = 419 participants





URBAN FORESTRY PROGRAM

Ohio’s Urban Forestry Assistance Program provides community officials and allied agencies with the organizational and technical assistance to effectively manage the trees and land within their communities. Ohio’s statewide network of regional urban foresters helps to develop and support sustainable urban forest management programs and empower communities to manage their urban forest resources to meet their local needs. The Division’s urban foresters also act as liaisons for the Tree City U.S.A Program of the Arbor Day Foundation.

FY19 Urban Forestry Program Statistics

Total Urban Forestry Assists.....	743
Total Community Assists.....	664
Total Communities Assisted.....	230

Tree City U.S.A Community Statistics

Tree City U.S.A Communities.....	237
Growth Awards.....	41
Tree Campus U.S.A	21
Tree Line U.S.A.....	6
Volunteer Hours.....	42,775
Trees Planted	24,312
Trees Pruned	77,545
Trees Removed	22,955
Urban Forestry Expenditures.....	\$40,552,536

2018 ISA Annual International Conference and Trade Show with ITCC

The beginning of FY19 brought the International Society of Arboriculture’s (ISA) Annual Conference to Columbus. Ohio’s Urban Forestry Program was intensely involved with numerous planning committees, International Tree Climbing Championship (ITCC) support, Tour des Trees coordination and support, field tour and panel discussion coordination, and four conference presentations. The team also conducted a pre-conference workshop on the Street Tree Master Planting Design that was well attended and received.

Tree Survival School Expansion

The Urban Forestry Program looked to new partners in FY19 for an expansion of the popular Tree Survival School into southwest Ohio. The new branch held its first course in October 2018 in partnership with the Little Hocking Garden Club, Belpre Township Trustees, and Washington County OSU Extension. Ohio now has three Tree Survival School Branches. The intensive, three-day course focuses on the purchasing, handling, planting, and maintenance of a new tree through the first 10 years of the tree’s life and is geared toward anyone who purchases, plants, or cares for trees in a commercial or public landscape: city service directors, tree commission members, tree crews, cemetery workers, and professional and school groundskeepers. The broad curriculum includes classroom lecture, hands-on outdoor learning experiences, and a fieldtrip to a local nursery. Tree and soil biology, selecting trees in a nursery, proper planting methods, young tree pruning, and root health are a few of the classroom and field topics covered by the course.



Richland Correctional Arborist Training

The Urban Forestry Program partnered with the Ohio Chapter of the International Society of Arboriculture, the U.S.DA Forest Service, and the Pennsylvania Department of Conservation and Natural Resources (PA DCNR) to develop and conduct a certified arborist preparation course for inmates at the Richland Correctional Institution in Mansfield, Ohio. This program was designed to help inmates nearing the end of their sentence develop skills that will help them gain meaningful employment upon release. PA DCNR spearheaded a successful new arborist training program at a Pennsylvania correctional institution to give the tree care industry a non-traditional and more diversified workforce pipeline. Following the success of this program, Asplundh and the Forest Service approached Ohio and Michigan with interest in replicating the training program in the Detroit and Cleveland areas to help fill the many vacant positions in the field of arboriculture.

Eligibility requirements for the inmates included a high-school diploma or GED, 18-24 months left on their sentence, no conduct reports for six months, and no Rules Infraction Board (serious conduct reports) for the last twelve months. The course was modeled after the Ohio Chapter ISA's successful Cert Prep Course to provide the inmates a comprehensive education in arboriculture. Active chapter members were engaged to teach each class based on the material presented in ISA's Arborists' Certification Study Guide and the Ohio Department of Rehabilitation and Correction (ODRC) secured grant funding to purchase twenty study guides as a resource for students to review and study outside of the classroom.

The 8-week course began in February 2019 and the instructors found the students were bright, inquisitive, and engaged. At the conclusion of the course, students completed a post-test to evaluate improvement from the week-one pre-test. Future courses will be supplemented with guest speakers from the utility, commercial, and municipal arboriculture industry to provide students with examples of career paths they could consider upon release.

Urban Forestry Assistance Program's 40th Anniversary

The Urban Forestry Program also held the first statewide urban forestry conference in 2019 to mark the 40th Anniversary of delivering technical and organizational urban forestry assistance directly to communities through a network of professional urban foresters. Although the program became official in 1979, the Division saw the need for urban forestry assistance in the early 1970s and assigned urban foresters to Columbus and Cincinnati in 1971 and soon after established a Cleveland urban forester in 1975. The 40th Anniversary conference was held in the Natural Resources Park at Ohio's state fairgrounds and featured keynote speaker, Dr. Jason Grabosky, Urban Forestry Professor at Rutgers University, recognition of urban forest champions throughout Ohio, a promotional video, numerous field demonstrations, and a celebration of urban forestry in Ohio. Community leaders, distinguished guests, and former state urban foresters from across the state joined us for this special gathering.

The program also celebrated the 10-year anniversary of our flagship program, the Tree Commission Academy (TCA), in 2019. The TCA, which received the Arbor Day Foundation's Innovation in Education Award in 2010, embodies the "teach people to fish" philosophy by empowering communities to build sustainable urban forestry programs from within. Our program

URBAN FORESTRY PROGRAM — *continued*

recently hosted the 1,200th student, ultimately impacting more than 4.6 million Ohioans.

Urban Forest Strike Team

On May 27, 2019, Ohio experienced a record tornado outbreak that resulted in one confirmed death, destruction of homes and property, and substantial damage to the urban forest across many communities. Several of the large tornados, including an EF3 and EF4 impacted the City of Dayton, Wright Patterson Air Force Base, and the City of Beavercreek.

In the following months the ODNR Urban Forestry Program worked closely with these communities and the U.S.DA Forest Service to deploy Ohio's Urban Forest Strike Team (UFST) for the first time as part of the area's recovery effort. Established in 2015, Ohio's UFST consists of 30



Dayton Region Urban Forest Strike Team



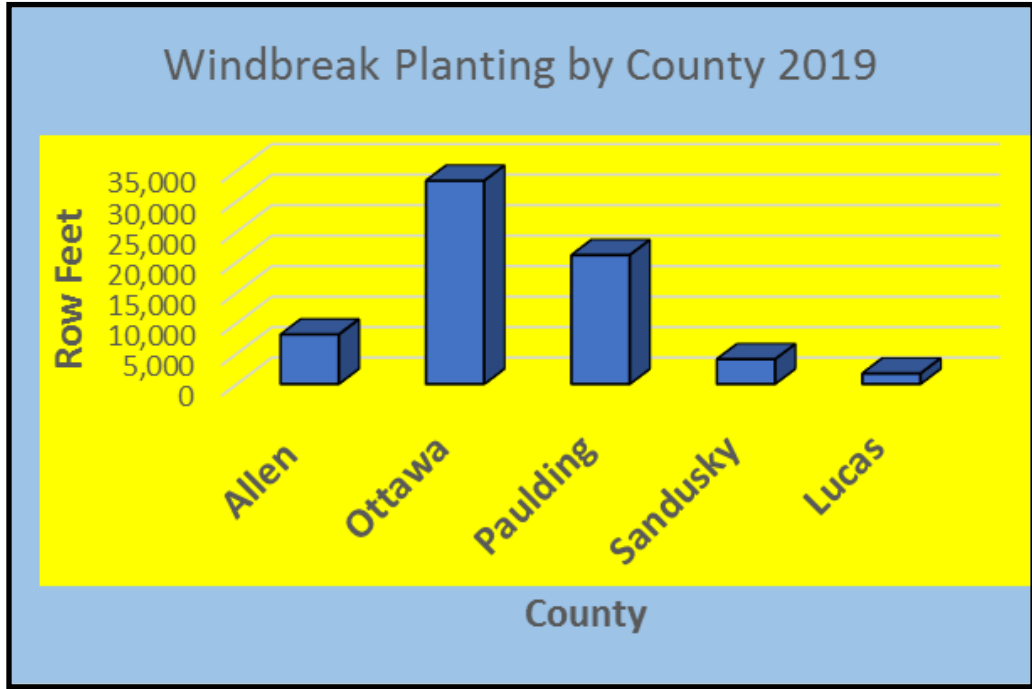
Urban Forest Strike Team crew evaluating tornado damage

urban foresters and International Society of Arboriculture certified arborists from Ohio municipalities, universities, and state agencies who have completed the Task Specialist and Incident Command System training. The team had also partnered with the Forest Service and Michigan's Urban and Community Forestry program for a mock disaster exercise in Toledo in 2016. The network, trainings, and partnerships proved to be critical as Forest Service staff from the Morgantown and Durham Field Offices, Eastern Region, State and Private Forestry, worked closely with ODNR to provide planning materials, a cache of supplies, computer tablets, assessment tools, and GIS support to ensure a successful deployment for the Dayton region.



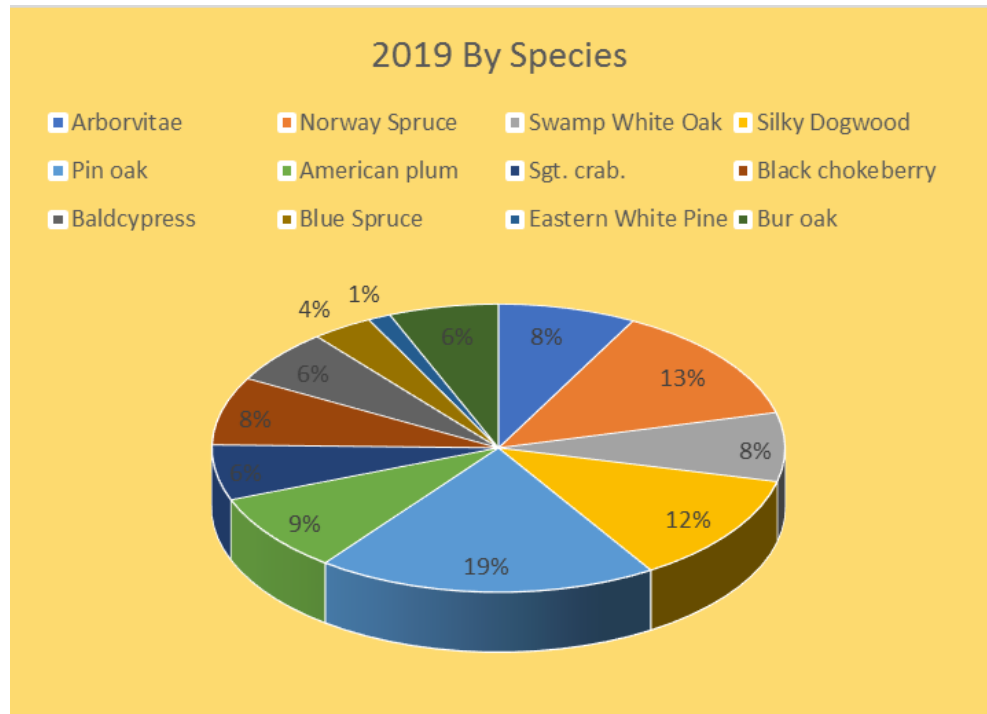
NORTHWEST OHIO FIELD WINDBREAK PROGRAM

The Northwest Ohio Field Windbreak Program, an interagency effort, began in 1977 to encourage planting of field windbreaks in northwestern Ohio to reduce soil erosion, protect crops from wind damage, and enhance wildlife habitat.



County	Row Feet
Allen	8,120
Ottawa	33,338
Paulding	21,141
Sandusky	4,065
Lucas	1,725
Total	68,389

Species	Number
Arborvitae	717
Norway Spruce	1,223
Swamp White Oak	712
Silky Dogwood	1,136
Pin Oak	1,773
American Plum	812
Sgt. Crab.	572
Black Chokeberry	707
Baldcypress	560
Blue Spruce	317
Eastern White Pine	119
Bur Oak	571
Total	9,219

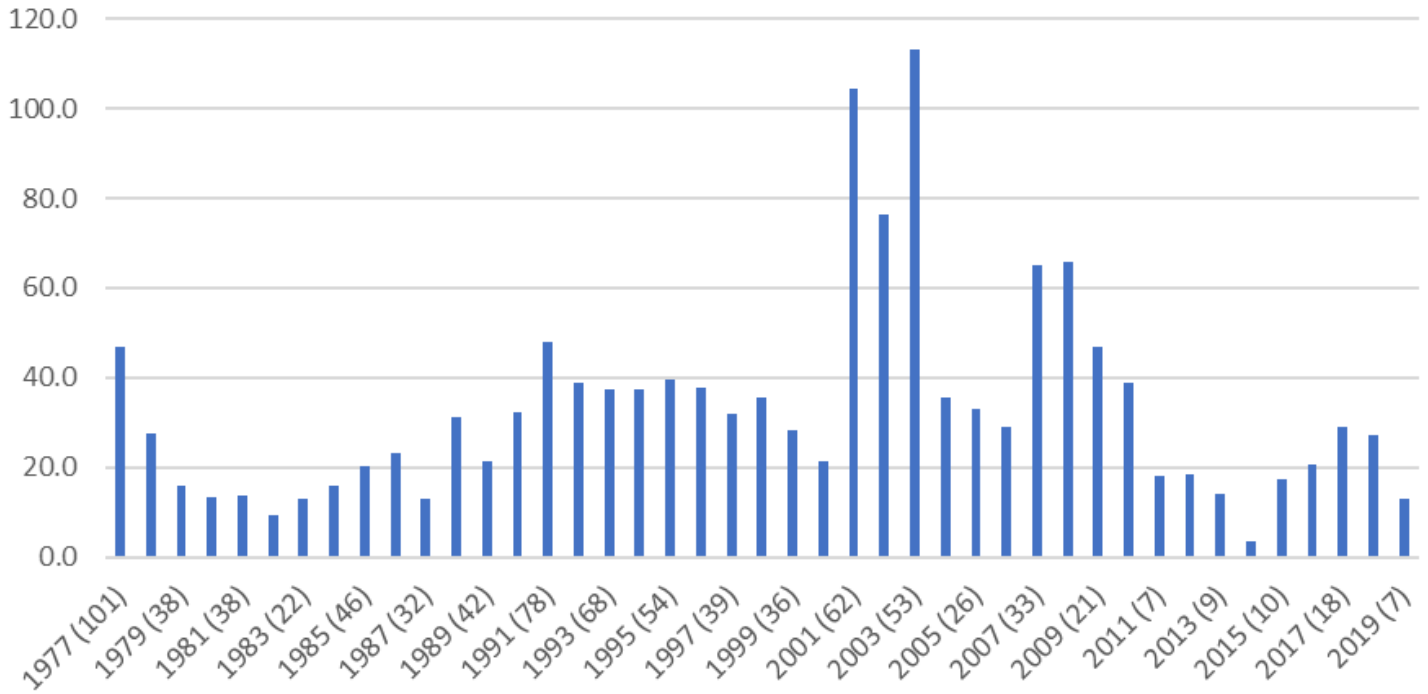




Northwest Ohio Field Windbreak Program — *continued*

Northwest Ohio Field Windbreak Program—Row Miles Per Year 1977-2019

Row Miles By Year (Number of WB's Planted in Parentheses)



Year	Total Miles
1977 (101)	46.8
1978 (60)	27.5
1979 (38)	15.7
1980 (39)	13.4
1981 (38)	13.8
1982 (26)	9.3
1983 (22)	13.0
1984 (34)	15.8
1985 (46)	20.4
1986 (60)	23.2
1987 (32)	12.8
1988 (51)	31.1
1989 (42)	21.4

Year	Total Miles
1990 (65)	32.2
1991 (78)	47.9
1992 (63)	39.0
1993 (68)	37.5
1994 (57)	37.2
1995 (54)	39.6
1996 (61)	37.8
1997 (39)	31.8
1998 (48)	35.7
1999 (36)	28.2
2000 (29)	21.5
2001 (62)	104.4
2002 (51)	76.2
2003 (53)	113.3

Year	Total Miles
2004 (30)	35.4
2005 (26)	33.1
2006 (23)	29.1
2007 (33)	65.1
2008 (35)	65.9
2009 (21)	46.8
2010 (24)	38.7
2011 (7)	18.2
2012 (10)	18.4
2013 (9)	14.2
2014 (6)	3.6
2015 (10)	17.3
2016 (6)	20.7
2017 (18)	29.1
2018 (15)	27
2019 (7)	13
Total	1,422.1



SERVICE FORESTRY PROGRAM

The Division of Forestry's Service Forestry program is the primary source of forestry assistance for private woodland owners in the State of Ohio. State service foresters provide one-on-one assistance and group education to landowners, helping them evaluate their woods and plan for proper timber harvests (e.g., Call Before You Cut program), create or enhance wildlife habitat, plant trees for future forests, and better understand the benefits of forests. State service foresters also administer Ohio's property tax reduction program for woodlands, called Ohio Forest Tax Law, and provide technical assistance to landowners participating in the U.S.DA's Environmental Quality Incentives Program (EQIP) and other federal incentive programs. The Division of Forestry works with many partners, including the American Tree Farm System, U.S. Department of Agriculture, local Soil & Water Conservation Districts, Wayne National Forest, and other state agencies like the Ohio Division of Wildlife, Ohio Department of Agriculture, and Ohio State University Extension.

2019 Forestry Assistance Report

Forest Stewardship Program and Rural Forestry Assistance	
Number of landowners receiving technical assistance	1,453 landowners
Number of landowners participating in educational programs	8,104 landowners
Number of acres covered by new or revised Forest Stewardship Management Plans	18,389 acres
Number of new and/or revised Forest Stewardship Management Plans	212 plans
Number of acres covered by current Forest Stewardship Management Plans	259,728 acres
EQIP Cost Share Assistance	
Number of new and/or revised Environmental Quality Incentives Program (EQIP) Management Plans	45 plans
Number of acres of new and/or revised EQIP Management Plans	3,142 acres
Supplemental Information	
Total Forest Stand Improvement	9,386 acres
Marketing assistance to landowners for potential timber harvests	3,367 acres
Referrals to Consultants	361

2019 Forestry Pollution Abatement Program Report

The ODNR Division of Forestry's (DOF) Forestry Pollution Abatement Program (FPAP) has the responsibility to enforce and promote Ohio's Forestry Pollution Abatement Rules and Standards, in partnership with Ohio's 88 Soil and Water Conservation Districts (SWCDs). In 2019, more than 40 logging site complaints were investigated to ensure that Best Management Practices (BMPs) were being used and that water quality was protected. Staff also provided BMP and complaint-response training to more than 70 SWCD staff and supervisors. DOF staff assisted with two statewide BMP training programs for logging companies during the year, in cooperation with the Ohio Forestry Association. BMP training was also provided to two logging companies for individualized training. Several public education programs were also conducted to educate landowners about the benefits of filing Timber Harvest Plans, prior to harvest, and utilizing BMPs throughout the logging process. These sessions were taught at numerous timber marketing events throughout the state, including events hosted by SWCDs, OSU Extension, and other partners.

The Division of Forestry provides leadership in wildfire prevention, training, suppression, and prescribed fire management. The Division participates in cooperative agreements with local fire departments, as well as in training, equipping, and coordinating the Ohio Interagency Fire Crew and specialized individual resource personnel for wildfires and disasters in and out of state. The Division also administers federal grants and federal excess property to rural fire departments.

The leading cause of wildfires in Ohio in FY2019 was debris burning. The remaining causes were distributed among other common causes:

Wildfires and Acres Burned by Causes Between 07/01/18 and 06/30/19

Cause	Number of Fires	Total Acres
CAMPFIRE	6	2.97
CHILDREN	4	11.5
DEBRIS BURNING	132	406.27
EQUIPMENT	19	16.1
INCENDIARY	16	106.35
LIGHTNING	2	.15
MISCELLANEOU.S.	70	383.02
POWERLINE	17	29.7
SMOKING	5	1.37
STRUCTURE	3	3.51
FIREWORKS	1	1
Totals	275 fires	961.94 acres

Wildfires and Acres Burned by Size Class Between 07/01/18 and 06/30/19

Size Class	Number of Fires	Total Acres
Class A - .25 Acres or less	99	11.14
Class B - .26 to 9.9 Acres	153	306.6
Class C - 10 to 99.9 Acres	21	444.2
Class D - 100 to 299 Acres	2	200
Totals	275 fires	961.94

FY19 Division of Forestry Prescribed Fire

The Division continued to provide leadership in prescribed fire management in 2019. Waivers of ORC 1503.18 were issued by the Division of Forestry to federal, state, and local government partners, as well as to private companies, NGOs, and citizens to facilitate prescribed fires across Ohio.

Prescribed Fires	Acres
Division granted 140 Waivers (can cover multiple units)	29,021 acres
Received 169 reports of burn units	5,181 acres



FY19 Rural Fire Department Support

The Division achieves its goal of reducing the threat of wildfires through partnerships with rural fire departments, which includes providing training, and administering federal grants and federal excess property to rural fire departments. Federal Excess Personal Property (FEPP) equipment is acquired from a variety of federal agencies, is loaned to a fire department, and must be returned to the Ohio Division of Forestry when no longer in use. Firefighter Property (FFP) equipment is provided to a fire department and ownership is transferred to the fire department after it has been in service for a certain amount of time. FFP equipment is acquired through the Department of Defense.

In fiscal year 2019 the Division utilized the two federal surplus property programs, FEPP and FFP, through agreements with the U.S. Forest Service. This effort has been aided by an enhancement of the online reporting database that fire departments used to report wildfire suppression activities. Request forms that formerly existed only on paper are now online. In the FFP program: 2,532 items valued at approximately \$791,391.62 were acquired and redistributed. Items of note included defibrillators, pulse-ox meters, SCBAs, hose and fittings, a pickup truck, and SUVs for fire departments. Through the FEPP program, 134 items valued at approximately \$77,787.24 were acquired and redistributed. Items of note included a type 6 engine and slip-in unit.

<p>Fire Department Grants: Volunteer Fire Assistance (VFA): 57 grants for \$294,574 Community Wildfire Risk Reduction (CWRR): 25 grants for \$51,334</p>
<p>Prescribed Fire Grants: Prescribed Fire STEP Grants: 11 grants for \$23,259</p>
<p>Wildfire personal protective equipment and tools (PPE) distributed: 24 FDs received \$95,460 of NFPA 1977 wildfire PPE</p>

Interagency Wildfire Suppression Support

The Ohio Division of Forestry trains federal, state, and local agencies for wildland fire detail and providing assistance to other states as part of a national effort.

Ohio crews and individual management personnel have assisted with hurricanes, floods, and wildfire incidents since 1986.

In FY2019, wildland firefighters from the Ohio Division of Forestry, along with engines and equipment, responded to several national requests for assistance in fighting wildfires — including in Alaska, California, Oregon, Texas, and Utah.





COOPERATIVE FOREST HEALTH PROGRAM

2019 Ohio Forest Health Report

The Ohio Department of Natural Resources (ODNR) Division of Forestry’s Forest Health Program is a cooperative initiative of partnering agencies and organizations within Ohio and neighboring states. Since insects and pathogens do not recognize state boundaries, it is important for states to work together to mitigate potential threats to their forest resources. This is achieved through rigorous field work and various investigative techniques. Additionally, state land managers, service foresters, and urban foresters are periodically asked for assistance and provide input related to forest health issues throughout the year.

Landowners and the general public are encouraged to call the Ohio Division of Forestry, toll free at 1-877-247-8733, and report any forest health concerns they feel are abnormal and potentially threatening.

Aerial Forest Health Survey

Each year, the Ohio Division of Forestry, with the use of Ohio Division of Wildlife aircraft, conducts an aerial survey over the majority of the state to survey Ohio’s forest health. This year’s survey began on June 11 and concluded on June 25. Flight lines were flown in an east to west direction with spacing of about six miles. Each flight day, two observers were equipped with digital mobile sketchmap (DMSM) tablet computers containing a GIS/GPS mapping system. The observers identified 157 different sites from the air with discoloration, defoliation, or mortality, totaling 7,846 acres. One-hundred nineteen of these sites were inspected on the ground by Ohio Division of Forestry staff. The top six damage-causing agents (DCA) and associated acreage are below:

Damage causing agent	Acres
Jumping oak gall wasp	1,570
Eastern white pine needle damage	1,392
Diplodia tip blight	1,004
Tornado damage	966
Unknown conifer discoloration	877
Sycamore anthracnose	801

The jumping oak gall wasp caused significant discoloration and defoliation of oaks, mainly in southeastern Ohio in 2019. This native wasp creates small galls on the leaves of oak trees which can result in browning and premature drop of foliage. This species is known to build to “outbreak” populations every few years, causing con-

spicuous damage to its oak hosts, however, significant forest health impacts are not expected from the outbreak in 2019.

Eastern white pine needle damage includes a suite of fungal pathogens that infect eastern white pine needles, causing discoloration, premature needle loss, and can weaken trees leading to dieback and mortality. This issue appears to be most severe in southern Ohio and is likely related to a variety of factors including recent years of above normal rainfall, tree age, and loss of tree vigor due to competition for sunlight with surrounding trees.



Photo 1: Tornado damage mapped in June of 2019 in Hocking County (Credit: Ohio Division of Forestry)

Beech Leaf Disease

A decline of American beech (and potentially several other non-native beech species) has been documented in northeastern Ohio since 2012. This decline is being referred to as beech leaf disease (BLD) and was first noted in Lake County and is now known to be present in parts of northeastern Ohio, Pennsylvania, New York, and the Canadian province of Ontario. Symptoms are first noticeable as dark interveinal striping on leaves, and progress over a period of one or more years to stunted and distorted leaves, reduction in leaf and bud production, and branch dieback. Mortality of understory trees and saplings has been documented. In 2019, scientists and researchers with several agencies and organizations including the U.S.DA Forest Service, Holden Arboretum, and cooperating Canadian agencies made progress in identifying the possible causal agent, believed to be a newly described species of foliar nematode. Work is also being done to document the spatial extent of BLD and study symptom progression. The Division of Forestry is monitoring for BLD on state forests.

Oak Wilt

The fungal pathogen *Bretziella fagacearum*, which caus-



Photo 2: Discolored eastern white pines due to white pine needle damage (Credit: Ohio Division of Forestry)

es the disease oak wilt, has been known to occur in Ohio for several decades, but there was a concerning increase in oak wilt infested areas in 2019. New infections were identified in parts of Carroll, Columbiana, Cuyahoga, Harrison, Jefferson, and Tuscarawas counties. This disease is deadly to oaks and the fungal spores can spread between trees aboveground via sap-feeding beetles and belowground through root systems of neighboring trees that have grown together, or “grafted.” Interestingly, oak wilt was also confirmed in planted Chinese chestnut trees in 2019. The Division of Forestry is working with landowners to help manage oak wilt infections on private land as well as on ODNR-owned properties.

Hemlock Woolly Adelgid and Elongate Hemlock Scale

Two non-native, invasive insects that infest eastern hemlock trees are present in Ohio. Hemlock woolly adelgid (HWA) is known to be present in 12 counties, while elongate hemlock scale (EHS) is present on yard and planted hemlock trees in several parts of Ohio, but only known to be infesting hemlock forests in northeastern Ohio. In 2019, the Division of Forestry, with assistance from several governmental and non-governmental partners, protected roughly 3,000 eastern hemlock trees across 1,300 acres with the insecticide imidacloprid to protect them from HWA. Since 2013, the Division of Forestry and partners have conducted HWA biocontrol predator beetle releases. Over 7,300 beetles (*Laricobius nigrinus* and *L. osakensis*) have been released on HWA-infested trees. Monitoring of treatment success and additional predator beetle releases will be ongoing. Continued hemlock pest detection surveys are planned for this winter. The Division of Forestry, along with partners, offered a hemlock treatment workshop in the fall of 2018 and will offer another in the fall of 2019 to inform land managers and arborists of the latest integrated pest

management techniques to suppress HWA and EHS and conserve eastern hemlock in Ohio. The ODNR Hemlock Conservation Plan was completed in 2017, with the Division of Forestry as the lead agency (the plan can be viewed at ohiodnr.gov/hwa). The plan is guiding the management of HWA and other hemlock pests in Ohio and also includes a prioritization of Ohio’s hemlock stands. All counties with confirmed HWA infestations are quarantined by the Ohio Department of Agriculture to prevent the movement of potentially infested hemlock materials out of the infested areas.

Asian Longhorned Beetle

The U.S.DA Animal & Plant Health Inspection Service (APHIS) and Ohio Department of Agriculture cooperatively manage the Ohio Asian longhorned beetle (ALB) eradication program and enforce a quarantine area of 57 square miles, centered over Tate Township in Clermont County, including East Fork State Park and Wildlife Area, to prevent the movement of regulated items including wood from any hardwood tree species out of the infested area. Surveys as of September 7 have located 19,145 infested trees, out of over 3.1 million trees surveyed. As of November 10, 19,040 infested trees have been removed. A replanting project was initiated by the Division of Forestry in the fall of 2012, with non-host tree species available to landowners who were impacted by landscape tree removals by the Ohio ALB program. Since the start of this program, approximately 1,600 trees have been distributed for planting.

Emerald Ash Borer

Emerald ash borer (EAB) has been the most devastating forest pest in Ohio in recent years, and quite possibly in history. As of 2016, all 88 of Ohio’s counties have confirmed infestations. In northwest Ohio, where EAB was discovered in 2002, the majority of native ash trees have been killed. Significant mortality of ash is now occurring throughout Ohio. In late 2014, a researcher at Wright State University discovered EAB infesting white fringetree. Subsequent experiments have con-



Photo 3: Diagnostic leaf striping symptoms of beech leaf disease (Credit: Ohio Division of Forestry)



Photo 4: Leaf “scorch” symptoms on oak leaf due to oak wilt (Credit: Ohio Division of Forestry)

firmed the ability of EAB to complete its lifecycle with in white fringetree in the natural environment as well as in cultivated olive in the laboratory. The impact EAB will have on these tree species needs further research. In 2019, the Division of Forestry, in cooperation with U.S.D.A APHIS, conducted releases of three

parasitoid wasp species (*Tetrastichus planipennisi*, *Spattius agrili*, and *Oobius agrili*) for biological control of EAB in Pike County. The Division of Forestry continues to help woodland owners manage their forests and utilize their ash resources, assist communities that are dealing with EAB issues, and work to increase public awareness about the insect.

Unusual Weather

Ohio experienced abnormally high amounts of rainfall during the first half of the growing season in 2019. In many parts of Ohio, the second half of the growing season was warmer and drier than normal. These weather anomalies led to widespread damage by foliar, shoot, and root pathogens in the spring such as anthracnose, leaf spots, and root disease on various species of deciduous and coniferous trees. In particular, sycamore anthracnose, maple leaf spot, and various needle disease of Colorado blue spruce and eastern white pine were commonly observed and reported. The second half of the growing season saw dry conditions, resulting in plant stress. Dieback and mortality of sugar maple was observed, likely as a result of the recent weather conditions. The extent of the damage is being assessed and the effects of weather events this year, and in recent years, will likely continue to contribute to forest health issues into the future.

Non-native Invasive Plants

Non-native invasive plants are a threat to the biodiversity of forests throughout Ohio. Some forests contain

dense infestations of invasive plants such as *Ailanthus*, Asian bush honeysuckles, autumn-olive, multiflora rose, and Japanese stiltgrass, while other areas remain largely uninvaded. Invasive plant treatments were conducted on over 1,000 acres of state forest land in 2019. Aerial mapping of *Ailanthus* in southern Ohio has allowed for targeted treatments to reduce

infestations on state forest, national forest, and neighboring lands. The Division of Forestry has partnered with researchers from the USDA Forest Service Northern Research Station to examine the efficacy of *Verticillium nonalfalfae*, a soil borne fungus, as a potential bio-control for *Ailanthus*. The Division of Forestry promotes invasive plant control by working with Ohio’s Cooperative Weed Management Areas (CWMAs), Cooperative Invasive Species Management Areas (CISMAs), Partnerships for Regional Invasive Species Management (PRISMs), and on private land through its Service Forestry Program and through other outreach events.



Photo 5: ODNR Division of Forestry staff treating a large eastern hemlock tree in the Hocking Hills to protect it from HWA (Credit: Ohio Division of Forestry)



Photo 6: ODNR Division of Forestry staff and partners conducting hemlock treatments at Shawnee State Forest (Credit: Martin McAllister, The Nature Conservancy)



State Forest Land Inventory

1. **Beaver Creek:** 1,122 acres, Columbiana County
2. **Blue Rock:** 4,578 acres, Muskingum County
3. **Brush Creek:** 13,419 acres, Scioto/Adams/Pike counties
4. **Dean:** 2,759 acres, Lawrence County
5. **Fernwood:** 3,023 acres, Jefferson County
6. **Gifford:** 320 acres, Athens County
7. **Harrison:** 1,345 acres, Harrison County
8. **Hocking:** 9,815 acres, Hocking County
9. **Maumee:** 3,332 acres, Fulton/Henry/Lucas counties
10. **Mohican-Memorial:** 4,541 acres, Ashland County
11. **Perry:** 4,706 acres, Perry County
12. **Pike:** 12,531 acres, Pike/Highland counties
13. **Richland Furnace:** 2,530 acres, Jackson/Vinton counties
14. **Scioto Trail:** 9,601 acres, Ross/Pike counties
15. **Shade River:** 2,859 acres, Meigs County
16. **Shawnee:** 64,736 acres, Scioto/Adams counties
17. **Sunfish Creek:** 637 acres, Monroe County
18. **Tar Hollow:** 16,446 acres, Ross/Vinton/Hocking counties
19. **Vinton Furnace:** 12,086 acres, Vinton County
20. **West Blue Rock:** 675 acres, Muskingum County
21. **Yellow Creek:** 756 acres, Columbiana County
22. **Zaleski (+ Waterloo @ 447 acres):** 27,377 acres, Vinton/Athens counties

Ohio's State Forest Facilities

Throughout Ohio's state forest districts there are nine staffed state forest locations. Each of these facilities is maintained by Division staff. Managers and staff complete much of the maintenance and upkeep in order to save cost and fully utilize the expertise of staff. Routine maintenance includes cleaning, painting, vegetation management, and minor repairs. In-house staff also conduct many of the larger renovation and repair projects such as remodeling, roofing, demolition, and minor plumbing and electrical work.



Fiscal Year 2019

Recreational Activities

Backpackers	5,347
Horse Campers.....	3,375
Family Campers.....	553
Hunter Campers	90
APV Riders	2,607
Gun Range Users	12,476
Rockclimbers/Rappellers.....	734

In fiscal year 2019, Ohio’s state forests were also enjoyed by thousands of horseback riders, hunters, anglers, hikers, mountain bikers, and others.

State Forest Recreation

State forests offer visitors numerous outdoor recreation opportunities that require a large land base and are compatible with sustained forest management, including backcountry bridle trails, backpack trails, mountain bike trails, day-use hiking trails, camping, hunting, wildlife viewing, and gathering. More than 300 miles of backcountry bridle trails, 80 miles of hiking and backpacking trails, and 50 miles of mountain bike trails are found on Ohio’s 21 state forests. The Division of Forestry is the sole provider of designated motorized trail riding areas on state lands for off-road APVs and motorcycle riding.

Each year the state forest staff maintain the trails through vegetation management, trail blazing, monitoring, and implementing soil and erosion control practices.

The camps are also maintained with practices such as mowing, hazard tree removal, kiosk and sign management, manure and trash removal, as well as latrine cleaning and maintenance.

Roadway Maintenance

Roads with a “state forest road” designation are maintained by the forest crews. Funding and technical expertise may be provided by ODOT on larger projects. These projects include, but are not limited to; road and parking lot paving, large quantities of aggregate or culvert placement, bridge repairs or replacement, and large road slip repairs.

Within the state forest road system there are more than 200 miles of road, more than 65 bridges, and several thousand culverts and headwall systems. There are numerous parking areas, pull-offs, scenic vistas, and service roads. All routine maintenance is conducted by district employees.

Dams

Maintenance of lakes, dams and spillways continues to be a priority for Division of Forestry staff. There are several small unclassified wildlife ponds that require minimal maintenance, but the Division also manages nine classified dams. These lakes and associated infrastructure are frequently inspected and the dam’s Emergency Action Plan or Emergency Preparedness Plan is followed if concerning issues are developing. The Division of Forestry utilizes the Division of Engineering for technical expertise and the Division of Soil and Water regulates these classified structures. Maintenance items on these dams include mowing the earthen levees, minor repair to spillway and associated structures, vegetation clearing, spillway clearing, ice mitigation, and exercising the drain valves if present. Lake maintenance may include seasonal water level lowering, inlet maintenance, snag removal, perimeter vegetation clearing, and mowing.

Special Use

State forests may be utilized in various ways by the public, stakeholders, other government agencies, companies, etc. There are laws, rules, and policies that dictate how the Division evaluates and grants permission for these land-use requests.

One of the most common venues for allowing a special use is the issuance of a “special use permit.” When relevant, an interested party would complete a special use permit application. It would then be evaluated by Division staff, and if approved, a permit for that use would be issued. These are commonly issued for short-term events in which one or more of the “forest rules” would need to be waived in order for the event to take place. In some cases, the Division may require an application fee, proof of insurance, and a surety bond. These events include, but are not limited to:

<ul style="list-style-type: none"> • Competitive trail races • Large groups utilizing recreation trails • Short term access to private land or utility lines across state forest property • Research 	<ul style="list-style-type: none"> • Events such as weddings, group tours, group camp use • Hay production from state forest fields • Geocaches • Concessions taking place on state forests • Filming
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Fiscal Year 2019 Land Management Report

FSC and SFI Certification of State Forests

The Ohio Department of Natural Resources Division of Forestry has continued to maintain certification of state forests under the Forest Stewardship Council® (FSC®) and the Sustainable Forestry Initiative® (SFI®). Ohio's state forests are the only dual-certified forests in Ohio and have been recognized by independent third party auditors as being "well-managed." NSF-ISR, an accredited SFI certification body, and Scientific Certification Systems, an accredited FSC certification body, continue to provide auditing services under the standards. Reports of the audit findings are available on the Division's website.

State Forest Timber Sales

Each year, the Division of Forestry evaluates a portion of the forest to assess inventory and determine potential harvesting opportunities. Harvesting can improve the overall health and condition of the forest by removing trees of poor health and vigor that are prone to attack from insects and disease. It also can reduce the stand's susceptibility to natural disturbances such as wildfire and ice storms. Timber harvests are one way that the Division meets the requirement in the Ohio Revised Code to "bring about a profitable growth of timber."

Most state forest timber sales are advertised and sold through a competitive sealed bid process. The purchasers of our timber sales are part of Ohio's \$26.3 billion forest industry that employs more than 122,000 people. The successful purchaser is required to use an Ohio Forestry Association – Certified Master Logging Company. These companies have completed training on environmentally sensitive harvesting. Division foresters supervise this process carefully by marking trees to be harvested and administering the operations as they proceed. Ohio's state forests are working forests that provide forest products and a diversity of wildlife habitats that are enjoyed by all.

Meeting the Division's goals of forest health improvement, creating young forest wildlife habitat, and oak regeneration remain the focus and priority of management actions.

State Forest Timber Sale Revenue & Harvesting Activity—Stumpage

In fiscal year 2019, revenue received from State Forest stumpage timber sales totaled \$2,313,024.63. Revenue lags sale advertisement because purchasers pay for sales as they are harvested via cutting section control or weekly payments in pay-as-cut sales. The Division continues to supply stumpage timber to Glatfelter Corporation as part of a supply agreement obligation that is part of the Vinton Furnace State Forest acquisition.

A portion of the revenue from state forests stumpage sales is distributed to local governments. The Division of Forestry is allowed to recover the costs associated with timber management. The net revenue is then divided as follows according to Ohio Revised Code; Section 1503.05: 35% to the Division of Forestry and 65% to the local county. From fiscal year 2019 State Forest stumpage timber

SALES FY2019

	Fund R043	Fund 5090
Board Feet	7,659,732	2,434,809
Tons	24,591	4,499
Revenue	2,892,032	2,371,664
Acres	1,778 acres combined	

R043 sales are normal stumpage sales. Revenues from these sales are shared with local governments through the "Trees to Textbooks" program. 5090 sales account for all forest product sales. The bulk of these sales are accomplished through the log sales where the Division utilizes contract logging crews as well as its own staff to accomplish the sales. Logs are then sold via sealed bids.

SILVICULTURE ACCOMPLISHED FY2019

Thinning	817
Clearcuts (under 10 acres)	97
Clearcuts (more than 10 acres)	346
Deferment harvests	268
Shelterwood harvests	192
Group Openings/Even-Aged	58

The Division follows scientific silvicultural management standards. The goals are based on the Division's 5-year management plan. Overarching silvicultural goals include oak forest regeneration, increasing early successional habitats, and rare habitat management.



Annual Stumpage Payments for Revenue Collected in Fiscal Year 2019

ADAMS COUNTY \$50,807.41 FRANKLIN TWP \$26,441.56 JEFFERSON TWP \$24,365.85 OHIO VALLEY LSD \$101,614.83 TOTAL PAYMENT \$203,229.65	MEIGS COUNTY \$1,689.56 OLIVE \$1,689.56 EASTERN LSD \$3,379.12 TOTAL PAYMENT \$6,758.24
ASHLAND COUNTY \$1,244.01 HANOVER TWP \$1,244.01 LOUDONVILLE—PERRYVILLE LSD \$2,488.07 TOTAL PAYMENT \$4,976.09	MU.S.KINGUM COUNTY \$97.45 BLUE ROCK TWP \$97.45 FRANKLIN LSD \$194.91 TOTAL PAYMENT \$389.81
ATHENS COUNTY \$4,001.78 WATERLOO TWP \$4,001.78 ALEXANDER LSD \$8,003.56 TOTAL PAYMENT \$16,007.12	PIKE COUNTY \$22,067.35 BENTON TWP \$11,379.97 PERRY TWP \$10,687.38 WESTERN LSD \$44,134.70 TOTAL PAYMENT \$88,269.40
FULTON COUNTY \$649.83 SWAN CREEK TWP \$649.83 LIBERTY LSD \$1,299.66 TOTAL PAYMENT \$2,599.32	ROSS COUNTY \$78,437.06 FRANKLIN TWP \$23,530.63 HARRISON TWP \$54,906.43 SOUTHEASTERN LSD \$156,874.09 TOTAL PAYMENT \$313,748.21
HIGHLAND COUNTY \$2,263.77 BRU.S.H CREEK TWP \$2,263.77 OHIO VALLEY LSD \$4,527.54 TOTAL PAYMENT \$9,055.08	SCIOTO COUNTY \$128,392.06 BRU.S.H CREEK TWP \$6,444.74 MORGAN TWP \$8,740.17 NILE TWP \$54,271.74 RARDEN TWP \$20,924.67 UNION TWP \$10,305.70 WASHINGTON \$27,705.04 NORTHWEST LSD \$92,830.54 WASHINGTON-NILE LSD \$163,953.55 TOTAL PAYMENT \$513,568.21
JACKSON COUNTY \$649.83 WASHINGTON TWP \$649.83 WELLSTON CSD \$1,299.66 TOTAL PAYMENT \$2,599.32	VINTON COUNTY \$84,916.56 BROWN TWP \$54,728.84 KNOX TWP \$6,874.09 MADISON TWP \$23,313.63 VINTON LSD \$169,833.12 TOTAL PAYMENT \$339,666.24
JEFFERSON COUNTY \$649.83 CROSS CREEK TWP \$649.83 INDIAN CREEK SD \$1,299.66 TOTAL PAYMENT \$2,599.32	

Revenue by Fund

Fund	Fund Description	FY 2019
5090	State Forest	9,504,604
5100	Property Management	13,382
5210	State Recreational Vehicle	847,306
GRF	Allocation	4,612,919
R017	Bond Refunds	113,850
R043	Timber Sales Redistribution	2,769,881
	Total	\$ 17,861,942

Expenses

FY19 Expenses	Fund						
Expense Type	5090	GRF	5100	5210	R017	R043	Total
Payroll	4,579,471	4,637,450		120,844			9,337,765
Purchased Personal Svcs	500,188			1,300			501,488
Supplies & Maintenance	2,813,028		24,171	39,698			2,876,896
Equipment	672,219			110,407			782,626
Subsidies & Shared Rev	675,722					2,312,003	2,987,725
Capital Items	525,695	4455G		545,790			1,071,484
Refunds					115,150		115,150
Total	9,766,323	4,637,450	24,171	818,038	115,150	2,312,003	\$17,673,134

*Expenses for Subsidies & Shared Rev includes expenses encumbered by PO for grants expected to receive reimbursement upon completion of projects.