

The State of Agriculture and Natural Resources in Ohio



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THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Preface

Purpose

The purpose of a program review is to guide program development on a continual basis. A program review is a process that evaluates the status, effectiveness, and progress of programs and helps identify future direction and priorities. Program reviews are a standard practice in higher education (Barak, 1082; Barak & Berdahl, 1978; Berrett, D., 2011). The OSU Extension agriculture and natural resources (ANR) program review is a voluntary practice for self-study and external review.

The Review Includes Five Elements

- The State of Agriculture and Natural Resources in Ohio
- Ohio State University Extension Agriculture and Natural Resource Internal Self-Study
- Ohio State University Extension Crowdsourcing Insight Summary: Agriculture and Natural Resources
- External committee visits and final report
- Key stakeholder communication throughout the process

Context

Ohio State University Extension embarked upon a multi-year effort to build the Extension organization of the future. That journey began with the *Vice President's Conversation on the Future of Extension*. The overall goal of that effort was to ensure that OSU Extension remains relevant and responsive to the needs of Ohioans well into the future.

Data gathered through the *Vice President's Conversation* was used as a foundation for a designEXT effort to put ideas into action. One of the designEXT steps includes partnering with individuals and communities to co-create multi-faceted solutions for current and emerging issues.

The *OSU Extension Agriculture and Natural Resources* review is the third in a series of OSU Extension program reviews. The first two reviews included 4-H youth development and community development. Family and consumer sciences and agriculture and natural resources program reviews are being conducted simultaneously to complete the series. This project timing coincides with a national search for a new associate dean and director of Extension.

Our land-grant mission –

OSU Extension delivers knowledge from Ohio State to every county in Ohio, and we work **WITH** people right where they live to strengthen their own lives and communities.

(excerpt from OSU Extension Interim Director Update,
Jackie Kirby Wilkins – August 2019)

Contact

Ohio State University Extension program reviews are conducted on behalf of Dr. Jackie Wilkins, interim director of OSU Extension, College of Food, Agricultural, and Environmental Sciences (CFAES). Program reviews are led by Dr. Greg Davis, associate director of programs and chair of the Department of Extension, with support from Terri Fisher.

<https://extension.osu.edu/strategic-initiatives/ohio-agriculture-and-natural-resources-anr-program-review>

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Ohio Overview

Ohio is a geographically diverse state comprised of approximately 29 million acres, of which 49 percent is in agricultural production. The state is comprised of lacustrine soils and a moderate climate along Lake Erie favorable for nursery, grape, and vegetable production. Northeastern Ohio is known for its northern hardwood forests and maple syrup production.

Western Ohio consists of plains and drained swamps and the best cropland in Ohio and comprises the western edge of the grain belt. There is also considerable beef cattle, swine, and poultry production in Western Ohio.

Eastern Ohio is part of Appalachia, with steep slopes and thin soils in many areas dominated by forests and forage production. This area contains the majority of Ohio's forestry activity along with beef cattle, sheep, and dairy production.

The southern part of the state borders the Ohio River with hills and alluvial soils in the lower lying areas. This area is known for its nursery production, along with beef cattle, forestry, tobacco, and a myriad of other agricultural commodities.

As we can see, the geologic and geographic diversity of Ohio has given rise to a large number of agricultural and natural resources crops/operations. Historically, Ohio has been at the center of many agricultural innovations, including the Obed Hussy and McCormick Reapers. Cincinnati was once the center of the national pork processing industry and Ohio was the lead producer of maple syrup during the Civil War. As with the state's beginnings, agriculture remains the largest industry in the state accounting for \$53 billion contribution to the Ohio economy, nearly 8 percent of the total Ohio Gross State Product and 12 percent of all jobs (DiCarolis et al, 2017).

Ohio's agricultural acreage is divided up among approximately 78,000 farms located statewide with a concentration in the western portion of the state. According to the 2017 census of agriculture, Ohio has gained more than 3,000 farms since 2012, an increase of 3 percent. However, the average size of these farms has decreased by 3.5 percent to 179 acres. Crops growing on these farmed acres and their estimated value of production can be found Table 1.

Table 1: 2018 Ohio acres farmed by crop and value of production (\$)*

Crop	Acres Farmed	Value of Production (1,000 \$)
Soybeans	5,050,000	2,527,350
Corn	3,500,000	2,252,415
Hay	2,070,000	420,504
Winter Wheat	490,000	170,438
Tomatoes	5,500	52,173
Peppers	1,500	12,040
Pumpkins	4,000	11,024
Oats	55,000	7,020
Cucumbers	1,900	4,983

*adapted from USDA/NASS 2018 State Agriculture Overview for Ohio

(https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=OHIO)

In addition to agronomic and vegetable crops grown, Ohio has a large and diverse livestock industry. Livestock inventories can be found in Table 2.

Table 2: Ohio Livestock Inventories for 2018*

Species	Inventory
Chicken (Broiler)	107,900,000
Chicken (Eggs)	31,000,000
Turkeys	6,700,000
Hogs	2,500,000
Cattle and Calves	1,310,000
Milking Cows	253,000
Sheep and Lambs	121,000
Meat Goats	45,000
Milk Goats	12,000

*adapted from USDA/NASS 2018 State Agriculture Overview for Ohio (https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=OHIO) and Ohio Poultry Association (www.ohiopoultry.org)

In addition to these more traditional crops, Ohio is experiencing increases in the production of hops, barley, hemp, and wine grapes. At the same time, we are observing decreases in other areas such as tobacco and dairy. Not included in these listings is a large nursery crops industry for which neither National Agricultural Statistics Service (NASS) nor the Ohio Department of Agriculture (ODA) have current information.

Approximately 30 percent of Ohio is covered in forests. These forests vary across Ohio, but are dominated by hardwoods. Northeast Ohio is at the southern edge of the northern hardwood region with forests comprised of sugar and red maple, black cherry, and walnut, with some oak, other hardwoods and mixed conifers. Northeast Ohio grows some of the highest quality walnut and cherry in the world which are used in higher end products such as cabinets and furniture.

Central and southern Ohio in contrast are at the northern edge of the Central Hardwood region dominated by forests comprised of oak, hickory, yellow poplar, maples, other hardwood species and mixed conifers including hemlock.

In spite of the large and diverse forested acreage, the forestry and forest products industries (including pulp and paper, lumber production, and secondary manufacturing) are relatively small and account for only 6 percent (\$3.3 billion) of the total agricultural contributions to Ohio. Most of the industry is concentrated in southern and eastern Ohio. The most significant producers are Pixelle paper in Chillicothe and Speyside Cooperage in Jackson. The remaining industry is in hardwood sawmills and in cabinet and furniture manufacturing. Syrup production occurs across Northeast Ohio and accounts for approximately \$8 million annually of the total forest products contribution.



Figure 1: Locations of concentrations of Ohio agriculture and natural resources production

A visual representation of the distribution of agriculture and natural resources operations can be found in Figure 1.

While Figure 1 gives an indication of concentrations of various agriculture and natural resources crops/products, it's important to remember that most of these commodities can be found across Ohio. For example, even though poultry and soybean production are concentrated in western Ohio, one of the state's largest egg production facilities and soybean farmers are located in central Ohio and northeast Ohio respectively. Also, while beef cattle production is concentrated in southeastern and northwestern Ohio, there

is beef production in every Ohio county. It is also important to note is that Ohio is criss-crossed with interstate highways from NE-SW and E-W. This transportation infrastructure, including shipping on Lake Erie and rail transportation, has contributed to the success of agriculture and natural resources enterprises in Ohio.

Agriculture and Natural Resources Agencies and Organizations

The Ohio Department of Agriculture (ODA) is the rule creation and enforcement body for agriculture issues in Ohio. As with most states, the director is appointed by the governor. The agency fulfills several important roles for Ohioans including supporting agriculture, protecting consumers, safeguarding plants and animals, and conserving natural resources. ODA is comprised of 13 divisions, including meat inspection, livestock environmental permitting, soil and water conservation, plant health, food safety, and dairy, among others. OSU Extension has a long history of working with ODA on a wide variety of issues and receives annual funding from ODA for a number of programs and activities including specialty crop block grants, pesticide safety education, and fertilizer applicator certification training. During the Avian Influenza outbreak in 2015, OSU Extension worked closely with the ODA to develop biosecurity protocols for Ohio poultry farms. These efforts helped to keep this devastating disease out of Ohio.

The United States Department of Agriculture (USDA) Farm Services Agency and Natural Resources Conservation Service are active in Ohio promoting federal programs including the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP) and other cost share programs designed to increase the installation and use of agricultural best management practices for water quality. As with the ODA, OSU Extension has a long history of working in partnership with these agencies on a wide range of issues including farm bill programs, water quality best management practice (BMP) implementation programs, and invasive species control among others.

OSU Extension works closely with USDA Animal and Plant Health Inspection Service (APHIS) and the USDA Fish and Wildlife Service on human-wildlife interactions and issues related to wildlife and agricultural production, especially as it relates to livestock.

The Ohio Department of Natural Resources (ODNR) regulates the forests, water, and wildlife of Ohio. As with the other agencies, OSU Extension has a strong working relationship with the ODNR. Most notably, ODNR is funding projects in southeastern Ohio dealing with Appalachian forest landowners. The current focus is with the Interagency Forestry Team working on oak regeneration in southeastern Ohio.

To encourage open communication and proactive planning, the Ohio Agriculture Committee was created by the Natural Resources Conservation Service (NRCS). Chairmanship of this committee rotates annually among NRCS state-level division chairs. All state and federal agencies involved in agriculture and natural resources in Ohio, along with the OSU Extension assistant director for agriculture and natural resources sit on this committee. Meetings are roughly quarterly and rotate with different members hosting. The meetings are designed to allow for agency updates, discuss issues of mutual concern, and proactively plan ways to address those concerns and other pressing current and future issues.

As with most states, the Ohio Farm Bureau Federation (OFBF) is a powerful player in statewide agriculture policy. OFBF often “leads the charge” on many agricultural issues, including water quality, Fertilizer Applicator Certification Training (FACT), livestock permitting issues, among others. Along with OFBF are multiple commodity groups including, but not limited to, the Ohio Cattlemens’ Association, Ohio Corn and Wheat, Ohio Produce Growers and Marketers Association, Ohio Pork Producers, the Ohio Aquaculture Association, and the Ohio Ecological Food and Farming Association.

The Ohio Livestock Coalition consists of all the animal agriculture associations, the grain producing associations, and the OSU Extension assistant director for ANR. As with the Ohio Agriculture Council, the Coalition meets semi-annually to discuss issues related to the grain and animal agriculture industries and proactively plan for future programs and activities. As with the state and federal agency partners, OSU Extension has a long tradition of working with these private partners. Because of these long standing working relationships, these organizations have a long history of supporting OSU Extension in a variety of ways including funding, needs assessments, program planning, and support with the legislature.

Threats to Agriculture and Natural Resources in Ohio

Invasive Species

One of the largest threats to Ohio agriculture and natural resources is invasive species. Beginning in the mid-1990s, the emerald ash borer invaded Ohio. Since that time, billions of ash trees have been lost across Ohio as a result of this insect. The damage may be most significant in urban areas where ash trees were widely planted across the landscape. The removal, clean up, and replacement cost for these trees is in the billions of dollars statewide.

The gypsy moth has long been a problem which is being held at bay by proactive treatment measures undertaken by the Ohio Department of Natural Resources in conjunction with cities across Ohio.

New threats include the Asian longhorn beetle (ALB), (found in the Cincinnati metro area), and the spotted lantern fly (SLF), found in western PA, 15 miles from the Ohio border. The ALB attacks a wide range of species, but prefers maples. This could be devastating to maple management, including lumber and maple syrup production. The SLF attacks fruit crops. The establishment in Ohio could result in significant losses in grape, berry, and other fruit operations across Ohio. Activities are currently being undertaken by agency partners to control the spread of these insects. OSU Extension is working with state and federal partners to educate farmers, landowners, and other interested parties in the identification and control of these insects, plants, and invasive animals.

A Changing Climate

Our climate is changing, and to understand how it is changing we must first understand the relationship between weather and climate. Weather describes instantaneous conditions including temperature, wind speed, and moisture; illustrated perhaps by the path a dog might take while on a walk. The climate is the long-term average of those weather conditions, described by the path that a dog walker might take while walking the dog. Evidence suggests that not only is the mean state of our climate changing, i.e. temperatures are warming, but so

too are extreme weather events (floods, droughts, hurricanes, etc.) that Ohio and the United States often experience.

The weather conditions in Ohio during 2019 exemplify the long-term changes we have experienced in our weather over the last century, including warmer temperatures (especially in winter/spring and at night), higher humidity, more annual precipitation, heavier spring/fall precipitation, increased frequency of intense rainfall events, intensified hydrological cycle (short intense droughts within a wet year), and a longer growing season. The local changes to climate have induced threats and increased risk to agriculture through additional heat stress on humans and livestock, unpredictable growing seasons as shifts in temperature and precipitation cause plants to bloom earlier/later, thriving environments for invasive, non-native plants and animals making them more apt to take advantage of weakened ecosystems and outcompete native species, disrupted important connections between pollinators, breeding birds, insects, and other wildlife and the plants, increased wetness duration and crop susceptibility to diseases and pests, losses in soil structure and soil organic matter with warming temperatures, increased potential for erosion, soil, and nutrient losses contributing to degraded water quality, and threatened specialty crops through false springs and extreme winter cold snaps that can lead to damage in grapes and other fruits.

Our changing weather patterns directly impact both our economic and environmental sustainability. These threats impact all facets of agriculture in Ohio differently, but understanding these threats moves us toward discussing and designing the means of building resilience. For livestock, we can think about improving cooling capacity, continued improvements in feed quality, and steps to prevent persistently muddy conditions. For our fields, our attention on soil and water quality through cover crops and decreased tillage not only improve conditions for crops and the land but help adapt the landscape to increasing precipitation through increased water storage capacity and improved soil structure. Additional water storage, tiling, controlled drainage structures may provide water to crops during periods of drought as well, which we know are still a part of our summertime conditions. Not to mention, improvements in our field management techniques (e.g., cover crops) can unleash the mitigating power that healthy soils and a growing crop might provide to reduce greenhouse gas emissions. These are but a few ways that farmers can help lead a push toward a more climate-resilient future in Ohio, as we expect warmer and wetter trends to persist throughout the 21st century.

Decline in Ohio Dairy Producers

Like the dairy industry across the US, Ohio's dairy industry has experienced significant turmoil resulting from five years of low milk prices, volatile markets for inputs, and unpredictable weather resulting in steady erosion of years of hard-earned equity and tremendous financial and emotional stress for farm families. Since 2017, Ohio has experienced an annual loss of dairy farms up to three times higher than the rate of exit between 2007 and 2017 (~60 herds annually), resulting in a 21.5 percent drop in total dairy farms in less than three years. Not all cows went to slaughter, with many moving to other herds in Ohio, the US, or Canada. Overall, Ohio's cow numbers declined by 10,000 head (3.8 percent↓) to 252,000 in January 2020, a 3.8 percent decline in the same time period.

A family's decision to exit the business of milking cows has far-reaching impacts on the family, their community, and the state. For every milk pump that is shut down after the last milking, there are employees who have to find another job, there is one less customer for a veterinary

practice, a nutritionist, a feed mill, a custom harvester, a dairy supply business, a fuel supplier, a local elevator, a builder, an equipment company. Each farm lost impacts a community. As many smaller farms consolidate into fewer, larger farms, some purchasing decisions move away from local suppliers to lower-cost, regional suppliers, further impacting local communities.

Remaining farms increasingly see the need for improved farm management skills if they desire to remain in the business of milking cows.

	1/1/07	1/1/17	10/1/17	10/1/18	10/1/19	1/1/20
Grade A Herds	2517	1924	1858	1744	1563	1536
Net Loss ¹ Grade A		593	66	114	181	27
Total Herds ²			2312	2130	1868	1814

¹Net loss from previous date

²Total licensed Grade A and Grade M herds in Ohio.

Data Source: Ohio Department of Agriculture Dairy Division

Water Quality

As with all the Great Lakes, Lake Erie is a vital source of drinking water, international and interstate commerce, recreation, tourism, and industry for the nearly 12 million residents living near the lake. Because of its relatively small size, warmer waters, and shallow depth, Lake Erie is more susceptible to disturbance due to natural and human influences than the other Laurentian Great Lakes.



Figure 2: Western Lake Erie Basin (WLEB) watershed

The Western Lake Erie Basin (WLEB) largely resides in Ohio, but also receives contributions from Indiana, Ohio, and Ontario, Canada. The WLEB has experienced significant nutrient loading, especially phosphorus, from a number of point and non-point sources for most of the 20th century. Excessive loading of nutrients, especially phosphorus and nitrogen, in agricultural run-off has long been associated with a myriad of water quality issues around the world, including the Great Lakes region. Phosphorus is the primary limiting nutrient for harmful algal bloom (HAB) development. Elevated nitrogen levels result in the formation of the toxin Microcystin, which causes liver damage in mammals. The cumulative

addition of phosphorus and nitrogen to the WLEB over time has enhanced the development of HABs and significantly impaired the water quality of the lake. This is evidenced by the 50-hour shut down of the Toledo water system in August of 2014.

Nutrient loading and water quality continue to be a problem in Lake Erie. Funds have been made available through multiple state and federal sources, including nearly \$100 million over the next several years through the H2Ohio program unveiled recently through the Governor's office. The goal of these funds is to implement best management practices for water quality on farms throughout the WLEB. It is unclear at this time what role Extension will have directly with the H2Ohio program. However, we are working with our partner state and federal agencies to

provide education and conduct on-farm research into water quality BMP efficacy and financial viability. To aid in this effort, six water quality Extension associates will begin work in March of 2020 to conduct on-farm research and Extension education programs across the WLEB.

Threats to OSU Extension ANR

Mission Creep by Other Agencies and Partners

Many of our partner organizations in Ohio are also interested in conducting educational programming. This includes the NRCS and the state soil and water conservation districts, which are part of the ODA. Often, these educational programs will be conducted using OSU Extension materials, PowerPoint presentations, etc. Unfortunately, the un-biased science-based message we are trying to deliver often gets lost in that organization's own messaging. This often results in additional work on the part of OSU Extension to straighten out the message.

This mission creep is also occurring with the Ohio Farm Bureau Federation, especially in the area of water quality. As an organization, OFBF wants to be known as the group leading the way to clean up Lake Erie. While this is admirable, it's challenging in that they as an organization will say things, or promise things that can't be delivered, or create unrealistic expectations for OSU Extension. Many meetings and discussions have been held with the OFBF, and this issue remains a work in progress.

OSU Extension is partially to blame for some of the mission creep problems. In 2015, following the Toledo water crisis which shut down the water supply to the Toledo metro area (with a population of ~500,000), OSU Extension received funding to write nutrient management plans for farms in the WLEB. Nutrient management plans are to be done by Soil and Water Conservation Districts (SWCD) sometimes with help from Farm Service Agencies (FSA). That project ended over two years ago now, and we have an agreement with the SWCD and FSA that we will conduct education and on-farm research, and they will provide the direct technical assistance.

Hiring Process for County Educators

This process is discussed in more detail in the internal review section. However, unless the county requests someone with specific expertise, we have to advertise for someone with a degree in agriculture or natural resources. While we are able to fill county educator positions, those new educators have expertise in a wide range of fields including environmental science, entomology, and biology among others. This is leaving ANR with a dearth of expertise in traditional agricultural areas resulting in programmatic voids, especially in the areas of agronomy and animal sciences.

Loss of Faculty Expertise

The internal review document covers faculty expertise in the academic departments, but there have been some changes over the years in this group of Extension professionals. In general terms, the number of FTEs has decreased, along with the percentage appointment on each faculty member. More Extension faculty with smaller Extension appointments/responsibility isn't very helpful. We are losing expertise in areas which many of our clientele still find valuable and are having to become creative in how we address these needs.

Maintaining our Relevance in the Modern Age

It is an increasing challenge for all of Extension, including ANR, to explain our relevance in the modern age, where all the world's information is available at your fingertips. Extension, including ANR, needs to do a better job of communicating the fact that we provide non-biased science-based information. An added complication is that many do not trust the science we are reporting on. We need to find new ways to teach the science. Be it GMO's, herbicide use, forest management, organic...there is a large distrust of the science. To remain relevant, our clientele have to trust the science we're using and that we are non-biased.

Increase in use of paid consultants versus OSU Extension

There is an increase in the use of paid agricultural consultants, especially among larger farmers. These farmers are turning away from Extension more and more as they increasingly rely on their salespersons and consultants. This is an issue with some county commissioners. A commissioner in one of Ohio's largest corn and soybean counties will not support the funding of an ANR educator because he's a seed company rep and doesn't see the need for Extension. The irony is that OSU Extension provides most of those consultants with their training and continuing education hours.

Associations Conducting their own Educational Programs

A handful of associations in Ohio are conducting their own educational programs for their membership, largely without the assistance of OSU Extension. While this is in their purview, it becomes difficult when we have to refute what they taught later due to incorrect, and in some cases no-science.

Opportunities for Agriculture and Natural Resources in Ohio and for OSU Extension

Increase in Farms

The increase in farms across Ohio represents a tremendous opportunity to expand the reach out to presumptive new farmers. These new farms will also help enhance the agricultural history and traditions of Ohio. It also helps Extension remain true to its beginnings.

Central State University

Central State University (CSU) became an 1890 land-grant institution with the passage of the 2014 Farm Bill. During the last six years, CSU has been slowly developing their Extension and research programs.

This is a terrific opportunity for the Ohio land-grant universities to work separately and in partnership to better help Ohio residents. As an example, one of CSU's first hires was an Extension forester, located on the Wayne National Forest in southeastern Ohio. This individual is developing new programs and working collaboratively with an OSU Extension forester also located in southeastern Ohio. The presence of CSU combined with the collaborative working being conducted is making a difference not only for Ohio forest landowners, but also with our partnering state and federal agencies.

Organic Production

Organic production is increasing in Ohio. Most of this is vegetable and dairy, but increases in meat and grain production are also being realized. This provides OSU Extension with an opportunity to develop more research and Extension programs geared for the organic industry. CFAES is working on a plan to identify who in the college has organic expertise, and how research and Extension activities can be developed to better help these producers. The rise in organic producers gives OSU Extension another opportunity to reach out to a largely untouched audience of farmers and consumers across Ohio.

On-Farm Research

On-farm research has long been a staple of OSU Extension ANR county educator duties. The value of these research activities has increased in recent years with the development of the E-Fields project (<https://fabe.osu.edu/programs/eFields>). This effort is led by an agronomic crops field specialist housed in the state ANR office and a state specialist in the Department of Food, Agricultural, and Biological Engineering.

eFields represents an OSU Extension program dedicated to advancing production agriculture through the use of field-scale research. This program utilizes modern technologies and information to conduct on-farm studies with an educational and demonstration component used to help farmers and their advisors understand how new practices and techniques can improve farm efficiency and profitability. The program is also dedicated to delivering timely and relevant, data-driven, actionable information. Current projects are focused on precision nutrient management strategies and technologies to improve efficiency of fertilizer placement, enable on-farm evaluation, automate machine functionality, enhance placement of pesticides and seed, and to develop analytical tools for digital agriculture.

eFields has earned university and national recognition as an outreach project and product. The report itself is giving county educators an opportunity to have essentially a published abstract, which gives them an additional publication which is important for promotion and tenure. But perhaps most importantly is that it is applying common research protocols across a wide range of sites. By utilizing a similar protocol, it amplifies the value of that research for Ohio farmers.

Loss of Faculty Expertise

The loss of faculty expertise in the academic departments also provides an opportunity for the departments, working with the appropriate commodity groups and OSU Extension administration to bring on new expertise in new program areas. Many times, there is academic inertia in a senior faculty member conducting programs and creating curricula for subjects which aren't as important as they once were. We have this opportunity at hand in a number of academic departments across the college.

Urban Agriculture

Ohio is blessed to have a number of large urban areas including Cleveland, Columbus, Cincinnati, Toledo, and Youngstown. Urban agriculture and local food production are a growing phenomenon for several reasons, including a way to address food insecurity, a means for an economic enterprise, community building, and as job training for young people and others.

Our urban areas are giving OSU Extension ANR an opportunity to expand programs into urban areas, reaching new and diverse audiences and building support among this fastest-growing area of the Ohio population.

Conclusions

Ohio is a diverse state geographically with a wide range of landforms and climates which allow for the production of a large diversity of agricultural crops, animal agriculture, and forest production. Along with these diverse agricultural commodities are a correspondingly diverse group of partners, including state and federal agencies, commodity groups, and community organizations. OSU Extension ANR has a long history of working with these diverse agricultural commodities and state and federal agencies to ensure Extension needs are met.

Some challenges OSU Extension ANR is facing are similar to Extension programs in other states. These include questions about the usefulness of Extension in the information age, Extension's relevance to urban audiences, competition from other agencies and associations (including those we've partnered with in the past), lack of trust and understanding of the science we are teaching, and a loss of state specialist expertise in the academic departments.

At the same time, there are many opportunities for OSU Extension ANR. The formation of Central State University as an 1890 land-grant university will allow for more Ohio residents to be reached and helped by Extension. Our large urban audiences give us the opportunity to expand urban agricultural operations and to reach a large, diverse, and new audience to Extension. Changes in Extension specialists in the academic departments will allow us to give new directions to Extension programs in the future. The rise of the eFields project has dramatically improved on-farm research in Ohio and is giving county educators additional opportunities to participate in research and to develop the needed publication record for promotion and tenure.