



Northern Panhandle Conservation District

Long Range Plan

2016-2021

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Introduction:

As a part of the Focused Conservation Approach, each conservation district work unit has been tasked with creating a 5 year long range plan. This plan will cover aspects of the Northern Panhandle Conservation District such as key demographics of the district including soils information, an approach to locally grown foods, conservation education, historical conservation practices, and a look at local problems/issues to be addressed. The purpose of this plan will be to determine where the Northern Panhandle Conservation District will go in accordance with the Focused Conservation Approach, as well as where we are heading in respect to Conservation Education.

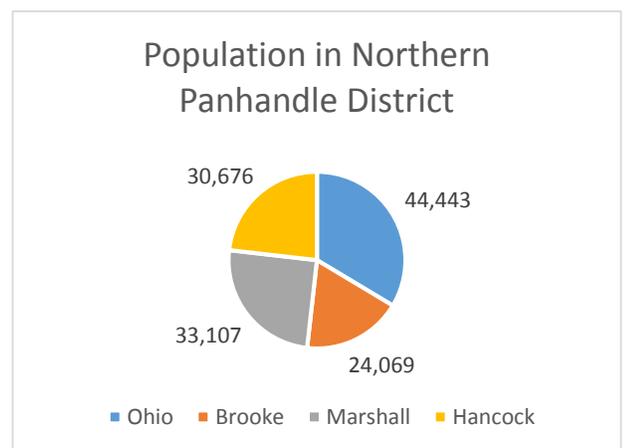
Demographics:

The Northern Panhandle Conservation District is made up of a four county area, from north to south, it includes Hancock, Brooke, Ohio, and Marshall Counties. It encompasses approximately 387,398 acres. The four county area drains into the Ohio River system and is made up of 5 major watersheds, they include Wheeling Creek, Upper Grave Creek, Harmon Creek, Buffalo Creek, and Fish Creek. Within the Wheeling Creek, Upper Grave Creek, and Harmon Creek Watersheds there are 18 watershed protection dams.

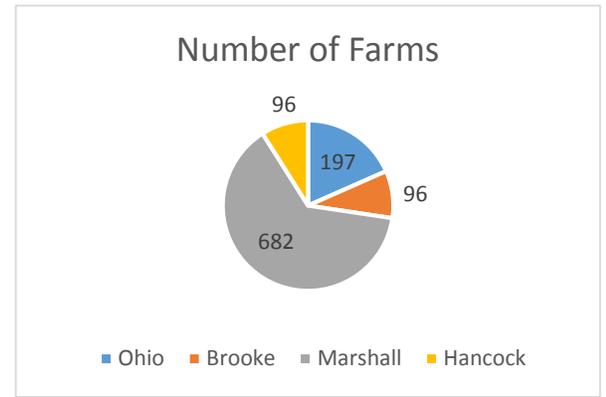
Population and economic characteristics in the Northern Panhandle Conservation District were derived from several references including the US Census and USDA National Agriculture Statistics Service.

Population: In 2014, there were approximately 130,828 people residing in the district. District wide, there was a population decrease of 2.2% since the 2010 Census.

Income: The average per capita income for the District in 2013 was \$24,135 while median household income is estimated at \$40,680. An estimated 15% of the district population are below the poverty rate. Statewide, per capita income is \$23,237, median household income is \$41,576 and the poverty rate is 18.3%.

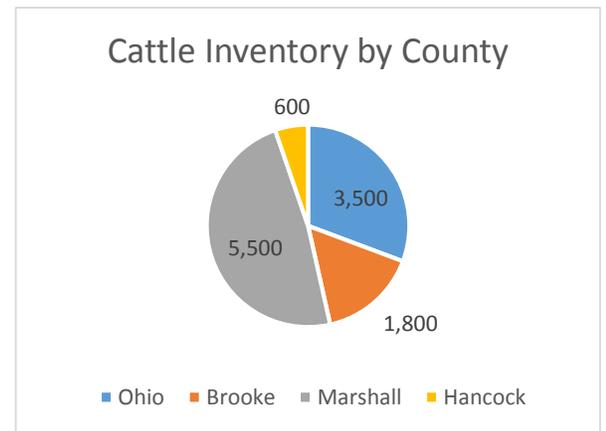


There are approximately 1,071 farms in the Northern Panhandle Conservation District. The farms span over 139,639 acres with the average farm size around 130 acres. Marshall County has roughly 64% of all farms in the Northern Panhandle District and 62% of the farmland acres which makes it the strongest agriculture county in the District. The Northern Panhandle contains about 4% of the total farmland in West Virginia.



Like most of WV, the majority of farmers in the District rely on off-farm income.

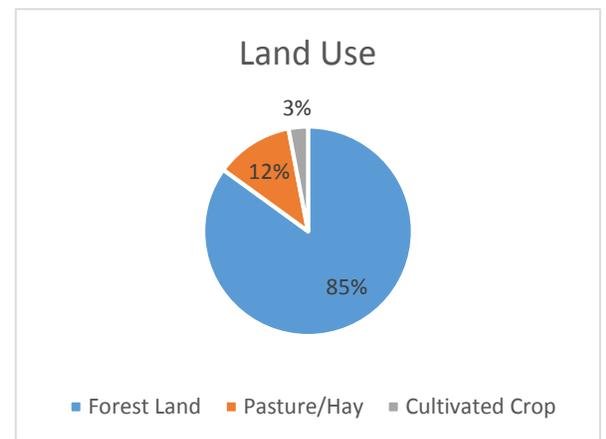
Cattle are the largest agricultural sector in the District with the majority of farms producing cattle for the beef industry. The following graph shows the distribution of cattle by county within the District.



Other livestock in the northern panhandle includes hogs, sheep & lambs, broilers, and goats.

Local land use in the Northern Panhandle varies between forestland, pasture/hay, and cultivated cropland.

Although 85% of the northern panhandle is forestland, only 15 landowners have active forest stewardship plans that encompass 2,750 acres of forestland.



Soils of the Northern Panhandle

All acres of the Northern Panhandle Conservation District are located within the Central Allegheny Plateau (MLRA 126). The district is comprised of several different soil types with a wide range of slopes. These soils can be grouped into areas of the district based on parent material, landscape position and soil properties.

The soils of the district developed from relatively level bedded shale, siltstone, sandstone, and limestone. The district is dominated on upland areas by Westmoreland, Culleoka and Dormont soils, and Dormont complexes with Culleoka and Peabody soils. Slopes range from 3-70%. Other major soils are Brookside soils on foot slopes, Sensabaugh, Chagrin, Lobdell, and Skidmore soils on floodplains, and Monongahela soils on terraces. Slopes on these areas generally range from 0-25%.

Over half of the district is in woodland, or is reverting back to woodland. Many of these reverting areas are being reseeded naturally to hardwoods.

On uplands, the majority of cleared land in the Northern Panhandle Conservation District is located on broad ridgetops and hillsides, with Culleoka, Westmoreland, and Dormont soils on slopes ranging from 8 to 70 percent. Cleared areas are used as pasture, hayland, and some cropland where not restricted by steep slopes. Cultivated areas commonly rotate corn, grains, and hay in contour strips. Culleoka and Westmoreland soils are well drained, have moderate clay contents in the subsoil, and may have very stony surfaces on the steeper slopes. All three soils have moderately high fertility, and are capable of supporting productive pasture and hayland. The Dormont soils have more limitations than the Culleoka and Westmoreland soils due to a seasonal high water table and higher clay content in the lower subsoil. Dormont soils are susceptible to erosion and soil slippage, and have a moderate shrink-swell potential. In Marshall County, the area from Fish Creek valley south to the Wetzel County line has bands of Peabody soil in the map unit complex with Culleoka and Dormont. The high clay content makes the Peabody soil is susceptible to rutting and smearing during wet times, and clodding after the disturbed soil dries out. Peabody soils are very susceptible to erosion and soil slippage, and have a high shrink-swell potential.

Upland areas in Hancock County have more acidic parent materials, and do not support pasture and hayland as well as other parts of the district. The majority of cleared land in Hancock County is located on broad ridgetops and hillsides, with Gilpin, Ernest and Berks soils dominantly on slopes ranging from 8 to 65 percent. It is used as pasture and hayland where not restricted by steep slopes. Gilpin and Berks soils are well drained, and have moderate clay contents in the subsoil. All three soils

have low to moderate fertility, but are capable of supporting productive pasture and hayland with good management. Berks soils may be droughty due to high amounts of shale fragments in the soil profile. Ernest soils are on footslopes and are deeper than Gilpin and Berks soils, but are limited by a seasonal high water table due to a fragipan at 20 to 30 inches.

Bottomlands, terraces, and less sloping footslopes tend to have more cleared land, and are commonly used for hayland, pasture, and some cropland. Cropland is more or less restricted to the wider floodplains and terraces located in the downstream areas of major drainages. Major soils along these drainages include the Sensabaugh, Chagrin, Lobdell, and Skidmore soils. Monongahela soils are the major soils on terraces, while Brookside and Dormont soils are located on footslopes. Along the Ohio River, major soils include the Huntington and Wheeling soils, though these soils are no longer in agricultural use. Slopes generally range from 0 to 8 percent on bottomlands, and from 3 to 15 percent on terraces and footslopes. The bottomlands are generally loamy in texture, with low to moderate amounts of clay in the subsoil, and are very deep to bedrock. Occasional flooding can occur in many of these areas. Most areas are well drained, but some bottomlands may have areas of moderately well drained to poorly drained soils in areas away from the main stream channel. Skidmore soils tend to not be used for agricultural purposes due to their location on very narrow, very gravelly floodplains. The nonflooding Monongahela soils on terraces are very deep moderately well drained soils with moderate amounts of clay in the subsoil, and are limited by a seasonal high water table due to a fragipan at 24 to 30 inches. Brookside soils on footslopes are deep and very deep moderately well drained soils with high clay content in the subsoil. The high clay content makes the soil susceptible to rutting and smearing during wet times, and clodding after the disturbed soil dries out. Brookside soils are susceptible to erosion and soil slippage, and have a moderate shrink-swell potential.

Strip mine soils make up a part of the upland areas in Brooke and northern Ohio Counties. The soils consist of a mixture of soil, rock, and coal fragments. Many areas are unreclaimed, and are best suited for timber production and wildlife habitat. More recently mined areas in northern Ohio County have been reclaimed and used for grassland. When reclaimed, limitations for most uses include drought during the summer months mainly due to lack of topsoil, low organic matter content, and moderately low available water capacity. Often soil pH and fertility levels are high on these strip mine soils, but forage production is somewhat limited due to soil characteristics.

Locally Grown Food:

Locally grown food has become a pivotal push in the Ohio Valley. Multiple groups have started markets across the Northern Panhandle. Seven different markets operate from approximately May thru October, with the majority of the markets starting in July. Locations vary throughout the district and include a mobile market; trying to bring fresh food to approximately 25 locations. Growers are also offering weekly fresh food baskets to participants across the valley. They offer a variety of fresh fruits and vegetables over a 10 – 15 week period.

Northern Panhandle Farm Markets			
Market	Day of the Week	Locations	County
Grow Ohio Valley – Mobile Market	Tuesday	McMechen	Marshall
	Tuesday	Monarch Stadium – Moundsville	Marshall
	Tuesday	Grand Vue Park	Marshall
	Tuesday	Centre Market	Ohio
	Wednesday	A & B Kia	Marshall
	Wednesday	East Wheeling	Ohio
	Wednesday	St. Michael’s Parish	Ohio
	Friday	Booker T Washington Plaza	Ohio
	Friday	Windsor Manor	Ohio
	Friday	Petropolis Towers	Ohio
	Friday	Brookpark Place	Ohio
	Saturday	Riverview Towers	Ohio
	Saturday	Garden Park Terrace	Ohio
	Saturday	3 rd St Playground – Beech Bottom	Brooke
Sunday	Highlands	Ohio	
Brooke County Farmers Market	Wednesday	Tractor Supply – Follansbee	Brooke
	Saturday	Former Snyder Station	Brooke
Howard Family Farms	Tuesday	Country Lane Crafts	Marshall
	Saturday	Country Lane Crafts	Marshall
Weirton Market	Monday	Good Will Parking Lot – Weirton	Hancock
Wheeling Farmers Market	Wednesday	Elm Terrace	Ohio
	Saturday	St. Michael’s Parrish	Ohio
Marshall County Farmers Market	Saturday	Fairgrounds	Marshall
Cameron Market	Wednesday	Family Dollar	Marshall

The Northern Panhandle Conservation District has joined in the Locally Grown Food movement, by installing a High Tunnel at the local USDA Service Center. This High Tunnel will be used in conjunction with area schools as a part of the Farm to School Program. Center McMechen and Glen Dale Elementary Schools send fourth grade students to the service center in the spring to plant



the crops in the high tunnel and raised bed community garden. The vegetables produced throughout the summer were harvested by staff at the USDA Service Center and are donated to the local soup kitchen in Moundsville, WV. In 2016, vegetables will first be offered to the summer school lunch program at Marshall County Schools before donation to the soup kitchen. In the fall the students will return as fifth graders to do harvests on the garden. This is a great way for the students to see the process from start to finish.



The Natural Resources Conservation Service has witnessed the benefit of the Farm to School Program in West Virginia and in 2016 provided funding to local conservation districts to help start or enhance school community gardens. The Northern Panhandle Conservation District was granted \$5,000 to work with the local schools to develop school gardens. Four schools in Marshall County; Center McMechen Elementary, Glen Dale Elementary, Sand Hill Elementary, and Moundsville Middle School will participate in this program. Additional raised beds will be installed at the USDA Service Center for Center McMechen and Glen Dale Elementary Schools to use, due to a lack of space at these schools. The teachers have also requested small table top greenhouse's to use in the classroom to start some seeds to be planted in the raised beds at the USDA Service Center. Moundsville Middle School will be expanding their current raised bed school garden and placing a fence around the perimeter of the garden. Sand Hill Elementary will install a brand new raised bed garden with a fence around the perimeter of the garden. Personnel in Marshall County visited the high tunnel and community garden at the USDA Service Center on April 14th to get more information on the program and the high tunnel.



The Northern Panhandle Conservation District along with NRCS staff will be having a community open house at the new NPCD High Tunnel on April 28th of 2016 to help promote high tunnels in the northern panhandle. Once people see a working high tunnel they will have a better understanding of the workings of the tunnel itself and the work that goes into one. The ultimate goal is to increase participation in the NRCS High Tunnel Program through EQIP and encourage locally grown foods.

Conservation Education:

Conservation Education is a high priority here in the Northern Panhandle Conservation District. We strive to show the importance of conservation and agriculture to a wide age range. Local educational activities include:

Hands on Ag Day – Each September, all 5th grade students in Marshall County, from public & private schools, converge on the Marshall County Fairgrounds over a two day period. The students rotate through 10-12 stations, depending on the number of students. Stations include – Youth Development through 4-H & FFA, The aMAIZEing Corn Power, Bees, Germ City, What’s in the Water, Forest Products, Soils, Horses, Goats, Sheep, and Beef. Each student is given a journal for the day to keep notes and after returning to school, the students can write an essay for a contest on what they learned that day. Multiple agencies, local farmers, and professionals volunteer to run stations, make lunches, and assist with various items throughout the two days.



Women in Ag Day – Every year in May local agencies within the USDA Service Center collaborate to provide a unique educational event aimed at women. Women make up 35 % of farmers nationwide. In the last seven years, attendance has risen from approximately 100 to 250 people. Over seven years topics have varied from pollinators, square foot gardening, marketing farm products, high tunnels, and the importance of women in agriculture. The entire program is funded by support from various agriculture groups.



Farm Field Day – The local NRCS staff partners with the Northern Panhandle Conservation District to bring a variety of conservation education programs to the local farm. Since 2011 there have been three field days in the conservation district. Past topics have included brush management, no till seeding demo's, waste management, spring development installation, and a fence building demonstration. In 2016 the farm field day will focus on soil health, maximizing forages, and animal health.



Conservation Dinner Meetings – Educational dinner meetings were held in 2013, 2014, and 2015. Topics included Conservation Programs, Estate Planning, Brush Management, and Forages/Importance of Forage Testing. For 2016 we plan to focus on Soil Health and plan it in conjunction to our Farm Field Day.



Historical Practices:

From 1997 to present, there has been a variety of conservation practices installed in the northern panhandle. Applied practice numbers are a result of technical assistance provided by the office along with financial assistance from USDA and NPCD programs.

- Access Control – 14,260 acres
- Brush Management – 830 acres
- Critical Area Planting – 39.6 acres
- Early Successional Habitat Development/Management – 75.7 ac.
- Fence – 362,119.7 feet
- Forage and Biomass Planting – 3,198 ac
- Forest Stand Improvement – 11 acres
- Heavy Use Area Protection – 36.5 s.f.
- Livestock Pipeline – 46,269 feet
- Livestock Use Area Protection – 22,846 acres
- Mulching – 19 acres
- Nutrient Management – 3,435.8 acres
- Prescribed Grazing – 15,890.9 ac.
- Roofs & Covers – 6
- Roof Runoff Structure – 620 feet
- Seasonal High Tunnel for Crops – 1,800 s.f.
- Spring Development – 173
- Tree /Shrub Establishment – 5.4 acres
- Tree/Shrub Site Prep – 2.5 acres
- Trails and Walkways – 5,925 feet
- Underground Outlet – 716 feet
- Waste Recycling – 865.5 acres
- Waste Storage Facility – 32
- Water Facility – 142

Our Partners:

Partners are an important part of the success of a program, in the northern panhandle we work with multiple groups of established partner. These partners have been used in conjunction with conservation programs and conservation education programs. They include:

- Brooke, Ohio, & Marshall County Farm Bureau
- Farm Service Agency
- Hancock, Brooke, Ohio, & Marshall County Extension Service
- Marshall County Schools
- Northern Panhandle Conservation District
- Northern Panhandle RC&D Council
- Northern Panhandle Stockman's Association
- West Virginia Conservation Agency
- West Virginia Department of Agriculture
- West Virginia Division of Forestry

Concerns/Issues:

Each year the Northern Panhandle Conservation District hosts a Local Work Group meeting in the conservation district. Over the years we have seen a decline in participation from partners to the public. As way to improve where our local work group is going, we held two meetings in the district in 2016. The north based meeting was held in West Liberty and the south based in Sherrard. Between the two meetings there was approximately 40 people in attendance from Marshall, Ohio, and Brooke counties. These meetings were used as the basis for data collection on resource concerns in the district. Multiple issues were talked about at each meeting and the list follows:

Priority Issues:

Improve Forages/Soil Health in Pasture & Hay Fields

- Forage Testing

- Grazing Systems/Rotational Grazing

- Multi – Species Grazing

- Stockpiled Forages/Grazing

Invasive Species

- Cocklebur

- Japanese Knotweed

- Thistle

- Woodlots – Japanese Stilt Grass & Tree of Heaven

Local Foods – Truck Crops

- Deer Fence

- High Tunnels

- Raised Beds

Pollinators

Water Quantity & Quality

- Developed Water Systems

- Payment Schedules

- Runoff from Roads (highways)

Forest Stewardship Plans

Additional Issues – Not Priority:

- Access Roads
 - Surface Water Controls
- Composting – Manure & Bedding
- Dairy Farms
- Farmland Protection
- Feed Pads – Covered Feeding Areas
 - Bedding Areas
 - Brown Areas around them
 - Entrances have Erosion Issues
 - Internal Cow/Calf Areas
- Fly Control
- Impacts from:
 - Coal Industry:
 - Loss of water from Long Wall Mining
 - Oil & Gas Industry on Water Quality/Quantity:
 - Altering Water Drainage & Flow
 - Leverage Assistance - \$\$\$\$
- Integrated Pest Management
- Organic
 - Transition and Certified Plans
- Recycling Ag Wrap Plastic
- Wildlife
 - Coyotes
 - Early Succession Plantings
 - Owl & Ruffed Grouse Habitat

Priority Issue Correction Strategies:

In an effort to address forage quality and soil health issues, we plan to utilize forage testing and developing rotational grazing plans to improve grazing systems. Landowners will work with local staff to develop a rotational grazing plan in conjunction with their conservation plan. This approach will help determine that all grazing fields have adequate water supply as well as fence to enhance this rotation. Forage testing will be completed on hay bales and pasture fields to ensure that livestock are getting the needed nutrients from what is available. If these tests show a decline in nutrients, the plan will be adjusted to ensure hay is being cut at proper times and that livestock are grazing at the right time to capture adequate nutrients. The Grazing Systems will include establishing stockpiled forage fields to help extend the grazing season. Resource Concerns – Degraded Plant Condition: Undesirable Plant

Productivity & Health; Inadequate Structure & Composition; Excessive Plant Pest Pressure and Livestock Production Limitations: Inadequate Feed & Forage; Inadequate Livestock Water.

Invasive species have plagued the northern panhandle, along with the entire state of West Virginia for many years. It's a problem in not only pastures but woodlots as well. Through the use of the Conservation Plan and Forest Stewardship Plan, we will address the eradication of invasive species. Partners in this endeavor will include the West Virginia Extension Service and the West Virginia Division of Forestry. Resource Concerns – Degraded Plant Condition: Undesirable Plant Productivity & Health; Inadequate Structure & Composition; Excessive Plant Pest Pressure.

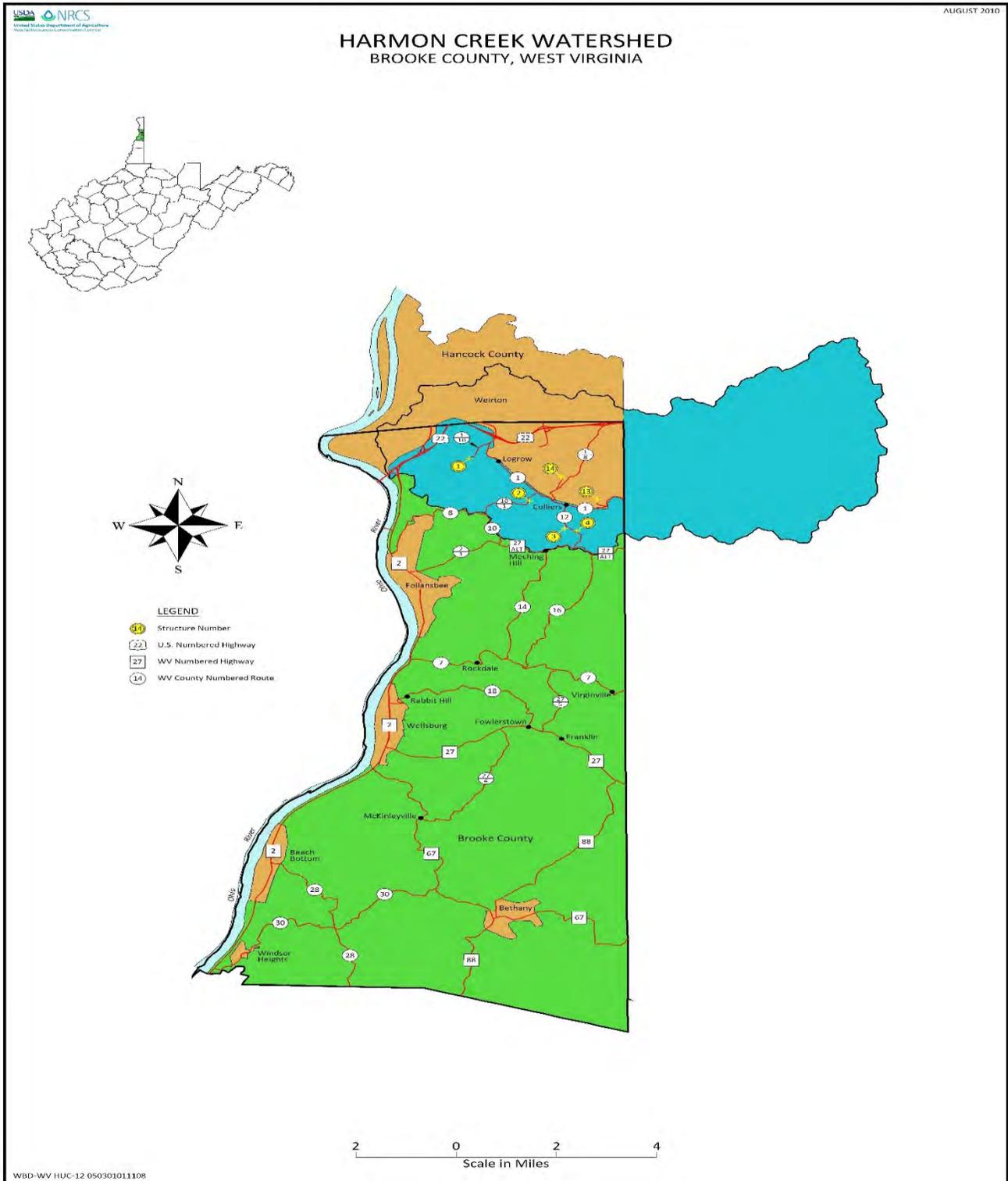
The Locally Grown Food movement is increasing in the Northern Panhandle Conservation District. The public has shown an interest in purchasing local foods and for supply to meet the demand there becomes a demand for assistance with high tunnels, raised bed gardens, and fence to improve plant health. As a part of growing food, beneficial pollinators are needed. Plans to improve pollinator habitat along with installing the needed infrastructure for growing truck crops will be addressed. Resource Concerns - Insufficient Water: Inefficient Moisture Management; Inefficient Use of Irrigation Water, Water Quality: Excess Nutrients in Surface Water, Water Quality Degradation: Pesticides Transported to Surface Waters, Degraded Plant Condition: Undesirable Plant Productivity & Health; Excessive Plant Pest Pressure.

We lack in the number of Forest Stewardship Plans in comparison to the number of forestland acres that are in the Northern Panhandle. If more of an incentive is placed on Forest Stewardship Plans, there could be an increase in participation of the forestry programs. Through our partnership with the WV Division of Forestry we can look at programs that help get these plans developed. There are multiple landowners in need of plans and a limited number of foresters writing them. Resource Concerns - Degraded Plant Condition: Undesirable Plant Productivity & Health; Inadequate Structure & Composition; Excessive Plant Pest Pressure.

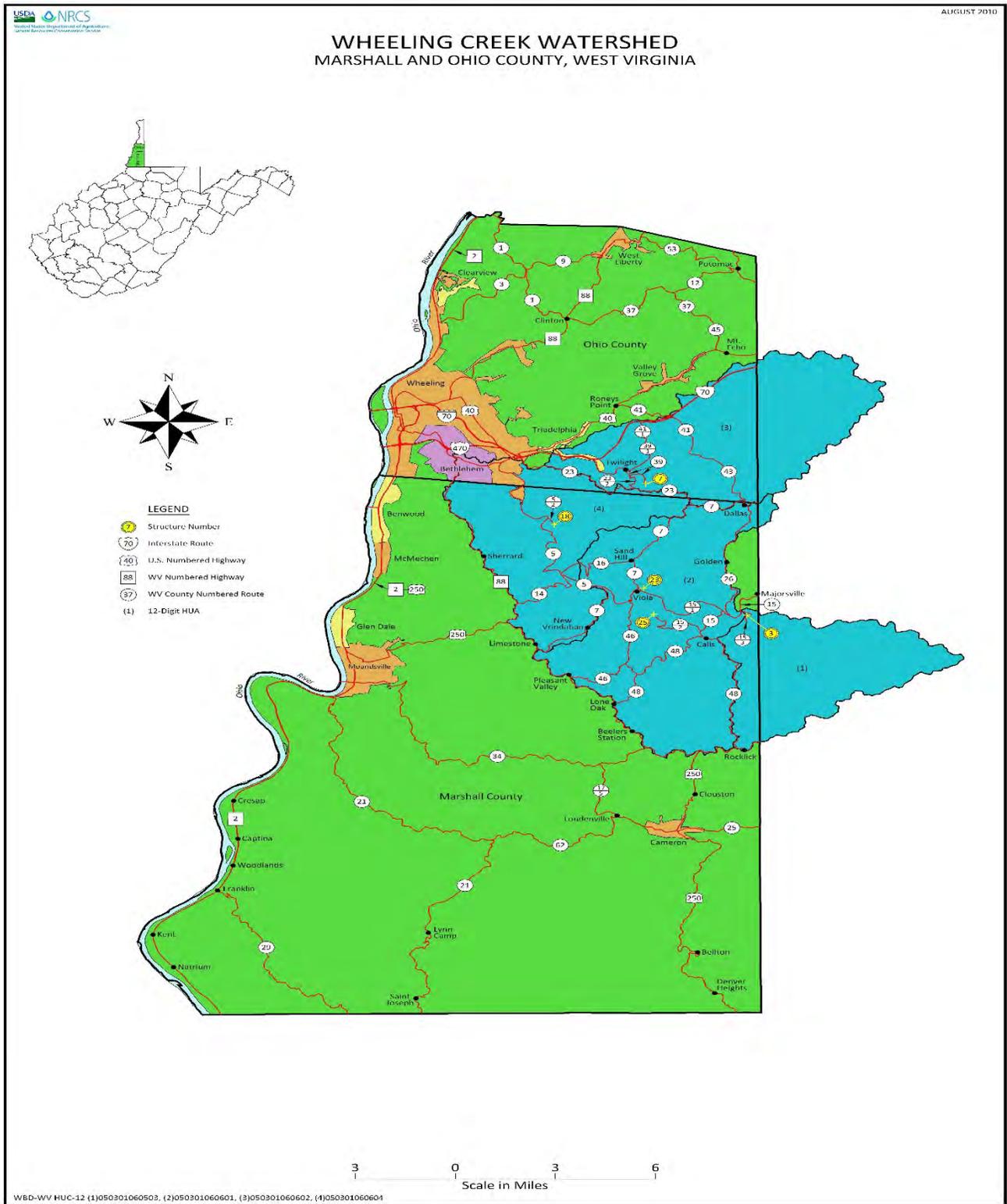
Education is the key to achievement and success, none of these correction strategies can be completed without educating landowners and the public on each aspect talked about. Field Days and Educational Dinner Meetings will be set up throughout the year to bring these issues to the forefront. Most landowners won't sacrifice a field to plant a certain type of fescue that is used to stockpile the forage and keep livestock grazing well into the winter months. By educating them, we can get

more people to see the benefits to not only the soil's health, but to their production system. More grass equals more pounds, which puts more dollars in the pocket, and that is the bottom line for producers.

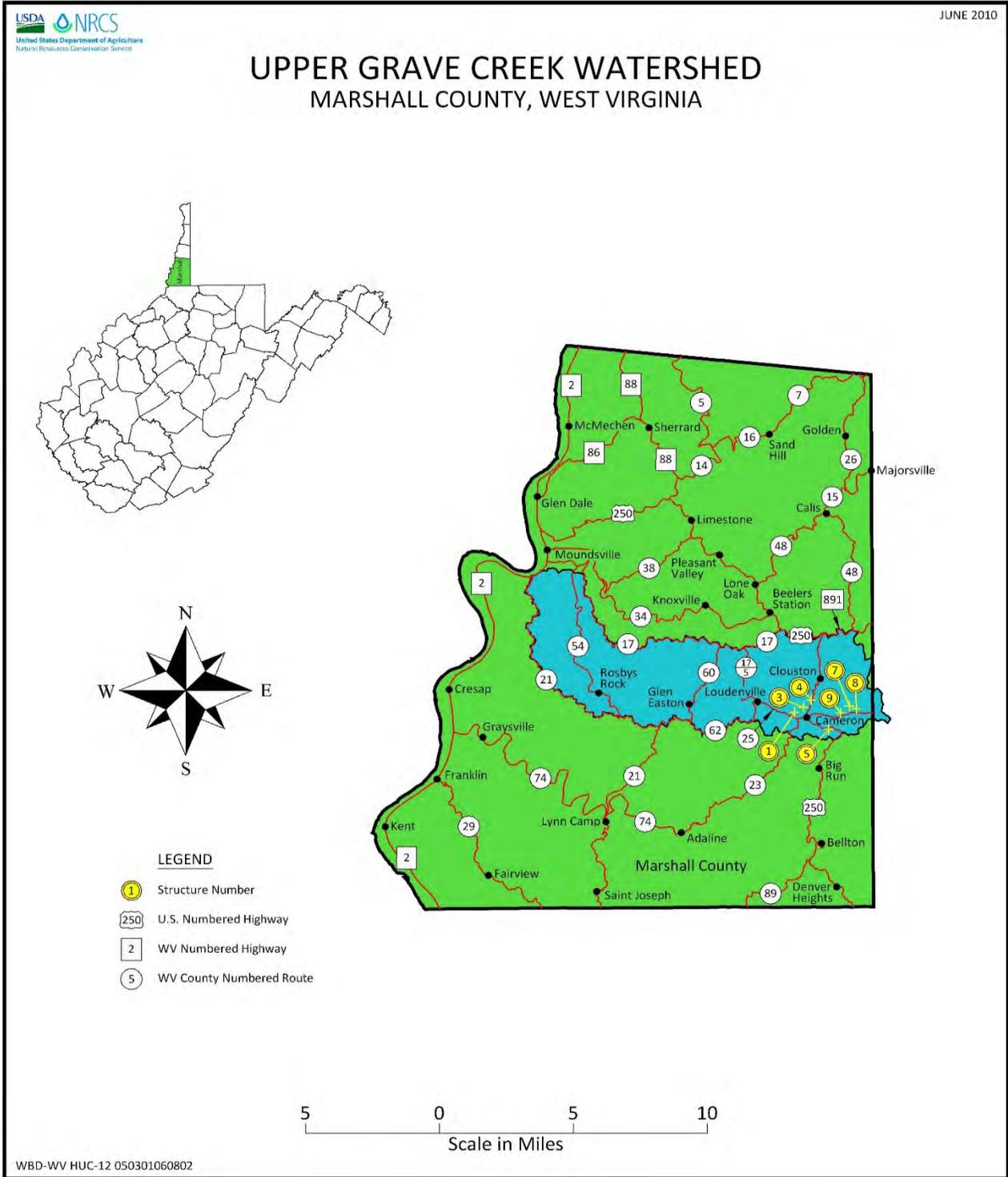
Appendix 1 - Harmon Creek Watershed:



Appendix 2 - Wheeling Creek Watershed:

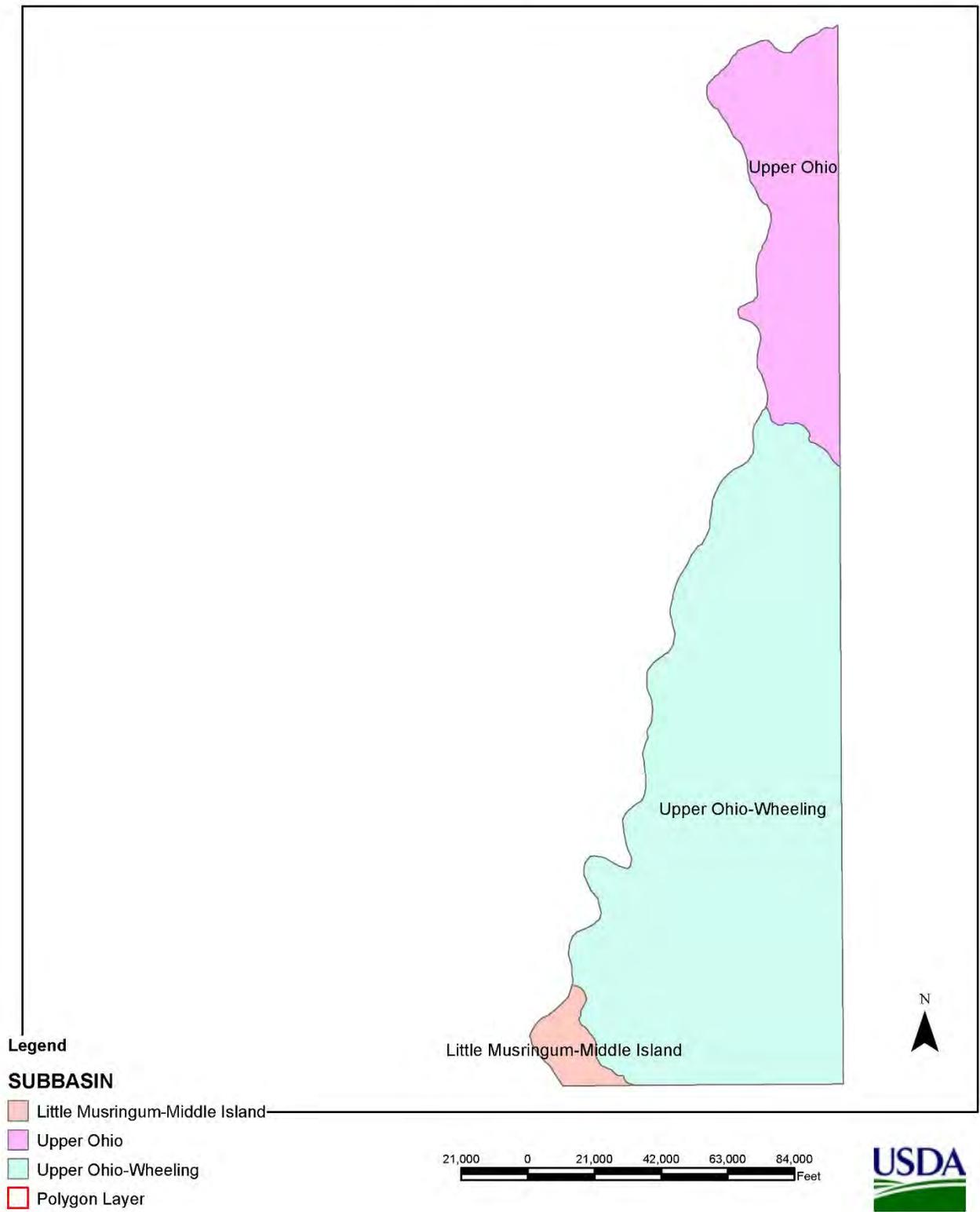


Appendix 3 – Upper Grave Creek Watershed:



Appendix 4 - Subbasin:

SUBBASIN



Appendix 5 - Watersheds:

Watersheds

