Long Range Plan for Kanawha County, West Virginia

April 2016

Written in Cooperation with West Virginia Division of Forestry, WVU Extension Service, West Virginia Farmers Market Association, West Virginia Conservation Agency, Capitol Conservation District, Farm Service Agency, Kanawha County Farm Bureau, and the Natural Resources Conservation Service

Table of Contents

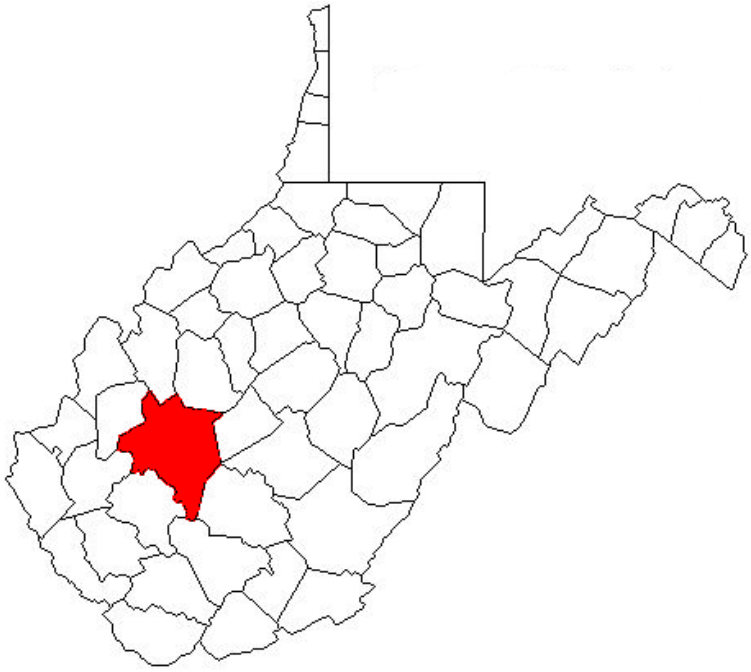
The purpose of this plan is to create a working document that describes the natural resources of Kanawha County, inventories problems that currently exist, and prioritizes projects for NRCS incentive programs.

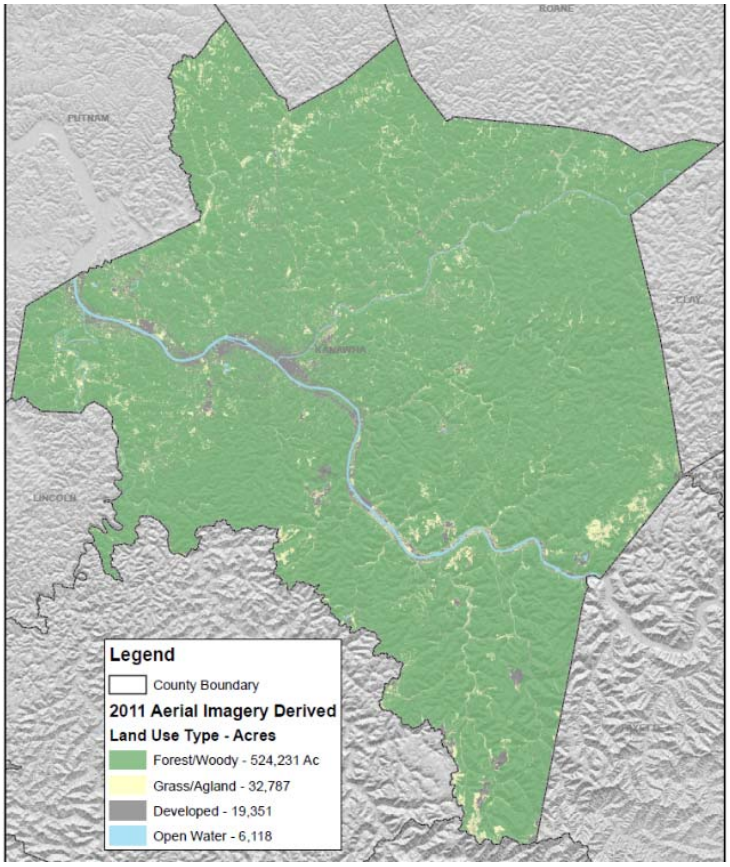
Conservation partners in Kanawha County include Capitol Conservation District, Kanawha-Putnam Farm Service Agency, WV Department of Agriculture, WVU Extension Service, WV Division of Forestry, WV Department of Environmental Protection, and Greater Kanawha RC&D.

This plan will look at priorities for conservation work in Kanawha County over the next five to ten years, however the plan should be reviewed annually and adjusted as necessary based on current events and changing resource concerns.

County Profile and Natural Resource Inventory

Kanawha County is located in the west-central part West Virginia and has an area of 581,100 acres or 908 square miles. The Kanawha River flows through the county from the southeast to the northwest. Most of the county is mountainous, but the northwestern part has less relief and more gentle slopes than the southern part, which is almost entirely mountainous. Kanawha County is the fourth largest county in the state and shares its borders with Roane, Clay, Nicholas, Fayette, Raleigh, Boone, Lincoln, Putnam, and Jackson Counties. The county has a population of 193,063 (2010 census) making it the most populous county in West Virginia. County data shows 88% of residents are white, 7.6% African American or black, 1.2% Asian, and 1.1% Hispanic or Latino. The county seat is Charleston, which is also the state capital.





According to the West Virginia Division of Forestry (WVDOF), there are 21,938 acres of publicly owned parks, forests, and wildlife management areas in Kanawha County.

Roughly 90% of the county is forested, 6% in agriculture production, 3% developed, and 1% water.

Geology & Soils

Kanawha County is part of a highly dissected plateau that is characterized by ridges and steep hillsides. The hillsides are broken by a system of benches. Kanawha County is drained by the Kanawha River and its tributaries. The Kanawha River and its southern tributaries flow in a north to northwest direction, and the northern tributaries flow toward the southwest.

The elevation of the county ranges from 566 feet at the water level of the Kanawha River near Nitro to 2,898 feet near the Kanawha-Raleigh county line. Hills are approximately 1,000 feet high and steep to strongly sloping in the northern and western parts of the county.

Major soils in the county include Gilpin-Upshur silt loams, accounting for over 17% of the county, and Clymer-Dekalb complexes, accounting for over 41%. Prime Farmland Soils in the county include Allegheny loam, Cotaco loam, Hackers silt loam, Kanawha fine sandy loam, Laidig channery loam, Moshannon silt loam, and Senecaville silt loam.

Climate

The average annual precipitation, as recorded in Charleston, is 44.02 inches. Highest precipitation amounts are recorded in July, while the lowest are recorded in October.

The average annual temperature for the area is 57˚ F. In winter the average temperature is 36˚ F and the average daily temperature is 27˚ F. The lowest temperature on record, which occurred at Charleston on January 24, 1963, is -12˚ F.

In summer the average temperature is 73°F, and the average daily maximum temperature is 84˚F. The highest recorded temperature, which occurred on July 14, 1954, is 102˚ F.

Of the total annual precipitation, 22 inches, or 54 %, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 18 inches. The heaviest 1 day rainfall during the period of record was 5.60 inches at Charleston on July 19, 1961. Thunderstorms occur on about 43 days each year, and occur mostly in the summer.

Average seasonal snowfall is 30 inches. The greatest snow depth at any one time during the period of record was 12 inches. On the average, 22 days have at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

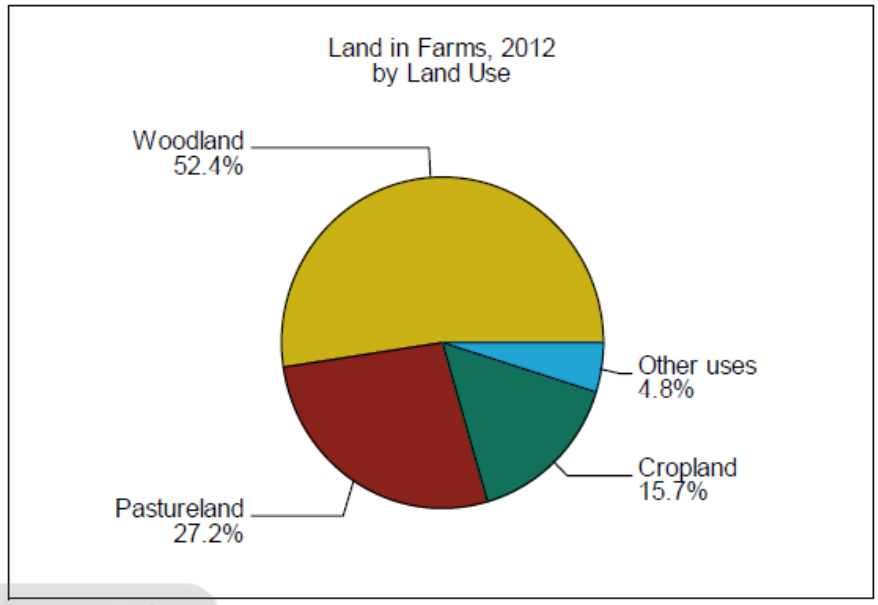
The average relative humidity in midafternoon is about 50%. Humidity is higher at night, and the average at dawn is about 80%. The prevailing wind is from the southwest. Average wind speed is highest, 9 miles per hour, in March.

Agriculture

According to the 2012 Census of Agriculture, there are 210 farms in Kanawha County totaling over 26,000 acres with an average farm size of 124 acres. Harvested crop land acres are 3387 ac across 134 farms. An estimated $441, 000 of crops and $884,000 in livestock sales were reported in 2012. Average per farm sales total $6,309 annually. The average age of primary operators is 59, with 88% being males and 98% white.

Kanawha County is home to an estimated 1,663 cattle, 960 laying hens, 376 horses, 255 goats, and 119 honey bee colonies.

The number of farms operated in Kanawha County decreased by 18% from 2007 to 2012.



Conservation

Over the past decade, NRCS has made payments totaling $798,989 for the installation of conservation practices on privately owned land in Kanawha County. The Environmental Quality Incentives Program (EQIP) accounts for 80% of those payments. These payments have resulted in substantial conservation benefits including: 282 acres of brush management, 10 miles of fence, 527 acres of forage planting, 10 ponds, 8,072 feet of pipeline, 29 watering facilities, 14 waste storage facilities, and 100 acres of forest stand improvement.

Commonly addressed resource concerns include Sheet & Rill Erosion, Streambank Erosion, Soil Compaction, Excessive Nutrient & Organics in Surface Water, Plant Productivity Health & Vigor, Noxious & Invasive Species, Inadequate Food/Shelter for Wildlife, and Inadequate Stock Water for Domestic Animals.

Conservation Treatment Needs:

Pastureland: treatment of noxious and invasive plants, development of livestock water, proper grazing management.

Cropland: improve plant productivity, health and vigor; reverse the decline of locally grown and locally available healthy foods

Forestland: treatment of noxious and invasive species (including tree of heaven, grapevines, oriental bittersweet, Japanese stilt grass, autumn olive, and multiflora rose), providing access for FSI activities and fire suppression.

Wildlife: improvement of upland habitat for game and nongame species, improvement of stream and riparian habitat for aquatic species, creation and improvement of pollinator habitat.

Assessment of Natural Resource Problems and Desired Outcomes

Invasive Species and Proper Grazing

What is the severity of the problem?
Noxious weed invasion and woody invasive species encroachment in pasture land is an issue that plagues nearly every land manager in Kanawha County. This resource concern is directly tied to proper grazing management. Most pasture in the county are overstocked or improperly maintained, opening the door for undesirable species to move in and flourish.

Who is willing to help with this resource concern?
Capitol Conservation District and West Virginia Conservation Agency have been consistent partners in outreach, education, and implementation of practices that facilitate proper grazing management and improved pasture health.

What are the goals?

- Educate farm operators on proper grazing management through on-farm field days, sponsorship to Appalachian Grazing Conference, and development of individual, farm-based grazing plans
- Provide workshops geared to horse owners to provide education on proper grazing distribution
- Improvement of forage quality through the control of invasive species, application of practices that improve soil fertility and soil health, and implementation of grazing management plan
- Provide better access to equipment that will reduce soil erosion and improve soil fertility (lime spreader, no-till drill, etc.)
- Provide education on sampling of soils, hay and forages to improve pasture health
- Target areas of invasive species management that will span landuses to more fully address the noxious and invasive species concern.

What resource concerns will be addressed?

- Degraded Plant Condition: Undesirable Plant Productivity and Health
- Degraded Plant Condition: Inadequate Structure and Composition
- Soil Erosion: Sheet and Rill

What practices will be utilized to address the resource concerns?

- Prescribed Grazing and associated practices
- Brush Management

Application of land-based practices and management practices on 500 acres in the watershed throughout a 5 year period would reduce the abundance of invasive species, increase forage quality and quantity, improve soil health and fertility, decrease erosion, and decrease sedimentation in water bodies and water courses within the watershed. An estimated $50,000 per year would be needed to accomplish this goal.

Locally Grown Food

What is the severity of the problem?
Urban sprawl and industrialization has led to a lack of locally grown and available food in our region. A lapse in the transfer of knowledge typically handed down from generation to generation has led to a community that lacks the skills and land to produce their own food.

Who is willing to help with this resource concern?
The Capitol Conservation District, WVU Extension Service, WVSU Extension Service, and West Virginia Farmers Market Association are all active partners in providing training, marketing, outreach, and implementation of practices related to the productivity, health and vigor of crops.

What are the goals?

- Enhance the production of locally grown foods through the use of season extension practices, pest monitoring and management, irrigation water management, and nutrient management
- Assist with practices that reduce damage to crops caused by wildlife
- Educate landowners and consumers on the importance of locally grown foods
- Provide outreach and marketing training for producers
- Provide workshops for hands on, in the field training and to provide connections between producers, growers, and landowners.

What resource concerns will be addressed?

- Insufficient Water: Inefficient Use of Irrigation Water
- Degraded Plant Condition: Undesirable Plant Productivity and Health

What practices will be utilized to address the resource concerns?

- Seasonal High Tunnels and associated practices
- Irrigation Water Management and associated practices
- Fence

Implementation of practices throughout the county would increase access to locally grown foods through the improvement of crop productivity, health, and vigor and reduction of wildlife crop damage on 10 acres over a 7 year period. A total of $30,000 per year would be necessary to accomplish this goal.

Forest Health

What is the severity of the problem?
Insects, disease, and overstocking have contributed to a decline in forest health in Kanawha County. Healthy forests go hand in hand with healthy ecosystems and wildlife habitat. Infiltration of invasive species such as autumn olive, tree of heaven, multiflora rose, and oriental bittersweet inhibit the growth and reproduction of native species.

Who is willing to help with this resource concern?
The West Virginia Division of Forestry, West Virginia Division of Natural Resources, and the Capitol Conservation District are all active partners in improving forest health. WVDOF is the authority on the development of comprehensive Forest Stewardship Plans on privately owned non-industrial forest land.

What are the goals?

- Improve wildlife habitat through the control of noxious and invasive species.
- Target areas of invasive species management that will span landuses to more fully address the noxious and invasive species concern.
- Provide road access for the implementation of forest stand improvement practice and to aid in the suppression of wildfires.
- Improve forest health through various TSI practices

What are the resource concerns?

- Degraded Plant Condition: Undesirable Plant Productivity and Health
- Degraded Plant Condition: Inadequate Structure and Composition
- Degraded Plant Condition: Excessive Plant Pest Pressure

What practices will be utilized to address the resource concerns?

- Forest Stand Improvement
- Tree & Shrub Establishment and associated practices
- Brush Management

Implementation of practices planned through WVDOF Forest Stewardship Plans on 1,000 acres over a 5 year period would decrease the abundance of noxious and invasive species, improve wildlife habitat, and increase forest production for a healthier forest ecosystem. An estimated $25,000 per year would be needed to accomplish this goal.

Wildlife Habitat

What is the severity of the problem?
Urbanization and the use of pesticides has led to a decline of native pollinator habitat in the Kanawha Valley. Pollinators are responsible for 1/3 of our nation's food and are vital to populations of native plant species in the area.
Agriculture, mining activities and industrialization, among other contributors have negatively impacted the native upland wildlife habitat, water quality and the instream habitat in many watersheds throughout the county.

Who is willing to help with the resource concern?
NRCS has active statewide partnerships with WV Division of Forestry, National Wild Turkey Federation, and WV Division of Natural Resources to address wildlife concerns. Locally, partnerships exist with WV Department of Environmental Protection and local watershed groups that are actively involved in the restoration of streams and wildlife habitat.

What are the goals?

- Improve pollinator habitat in urban areas
- Work with local watershed organizations to identify priority areas for upland wildlife habitat improvements and natural stream restoration.

What are the resource concerns?

- Inadequate Habitat for Fish and Wildlife
    - Quality and Quantity of Food
    - Quality and Quantity of Shelter
    - Habitat Continuity

What practices will be utilized to address the resource concerns?

- Conservation Cover
- Forage and Biomass Planting
- Tree and Shrub Establishment
- Upland Wildlife Habitat Management and associated practices

Pollinator habitat in urban areas will be improved through the continuation of the Pollinator Program with Capitol and Guyan Conservation Districts. Upland wildlife and aquatic habitat will be improved in a targeted watershed (TBD). An estimated $70,000 a year of a 3 year period would be required to accomplish this goal.

Data from this report was obtained from US Census of Agriculture (2012), US Census (2014), West Virginia Division of Forestry, and the Soil Survey of Kanawha County.