NRCS West Virginia

Preliminary Investigation Feasibility Report (PIFR)

Coal River, Kanawha County, WV
8-digit HUC (05050009)

November 2023

Table of Contents

Abbreviations

CFR – Code of Federal Regulations

NECH – National Environmental Compliance Handbook

NWPH – National Watershed Program Handbook

NWPM – National Watershed Program Manual

PIFR – Preliminary Investigation Feasibility Report

References

- NRCS National Environmental Compliance Handbook, Title 190, Part 610, May 2016
- NRCS National Watershed Program Manual, April 2014
- NRCS National Watershed Program Handbook, April 2014
- DM 9500-013 – Guidance For Conducting Analyses Under The Principles, Requirements, And Guidelines For Water And Land Related Resources Implementation Studies And Federal Water Resource Investments, January 2017
- Principles and Requirements for Federal Investments in Water Resources, March 2013
- NB 390-21-4 PDM - Watershed and Flood Prevention Operations Program Funding Guidance - Preliminary Investigation Feasibility Reports and Remedial Projects, July 2022

Summary

The following PIFR is a summary report of resource concerns and opportunities in the Coal River Watershed that may be eligible for a planning study according to the Watershed Protection and Flood Prevention Act (PL 83-566). The watershed spans across several counties in West Virginia, including all of Boone, parts of Kanawha, Lincoln, Logan, Putnam, and Raleigh Counties. The Capitol Conservation District requested formal assistance from the NRCS Watershed Operations Program.

The study area encompasses all of the watershed, which covers 576,000 acres. The watershed will be divided into subwatersheds for more detailed study should the sponsors request more planning. The watershed contains an outdated dam that is not NRCS assisted and no longer serves a purpose. There is a need to remove the dam to restore the stream to natural conditions. This action would also remove a potential public safety hazard and reduce liability. The Coal River Water Trail is a recreational asset to the region and a watershed project could enhance the water trail. Potential solutions contained in this report could provide long-term restoration with positive impacts to environmental, economic, and social aspects of living in the watershed. The baseline condition without federal investment is continued presence of an outdated dam, posing a threat to human health and safety.

Applicable Agency Authority and Authorized Purposes

The table below, provides documentation that the project is eligible for federal assistance and will meet statutory requirements.

Describe the potential project watershed area; how does the area meet the requirements outlined in NRCS's National Watershed Program Manual (See 506.50 NWPM Glossary - TTT. Watershed).		
Response: The Capitol Conservation District requested assistance with conducting a Preliminary Investigation and Feasibility Report (PIFR) for a potential watershed project in the Coal River Watershed (8-digit HUC (05050009). This assistance is authorized under the Watershed Protection and Flood Prevention Act (Public Law 83-566). The Capitol Conservation District is interested in being a sponsor for a watershed project in the watershed and they meet the PL 83-566 criteria for a sponsor. Watershed protection, public recreation, and water quality are the likely purposes of a potential watershed project.		
Will the project area exceed 250,000 acres in size? [1,2]	☒YES	☐NO
If over 250,000 acres will it be divided into sub-watersheds in one plan?	☒YES	☐NO
Potential Project Area Size: 576,000 acres		
Will any single structure provide more than 12,500 acre-feet of floodwater detention capacity, or have a 25,000 acre-feet of total capacity?	☐ YES[3]	☒NO
How many recreational developments will be included in the project area?		
• One development in a project area less than 75,000 acres	☒YES	☐NO
• Two developments in a project area between 75,000 and 150,000 acres	☐ YES	☒NO
• Three developments in a project area greater than 150,000 acres	☐ YES	☒NO

Which authorized purposes will the project address? (Indicate only one purpose as primary):		
	Primary	Other
• Flood prevention	☐	☐
• Watershed Protection	☒	☐
• Public Recreation	☐	☒
• Public Fish and Wildlife	☐	☒
• Agricultural Water Management	☐	☒
• Municipal or Industrial Water Supply	☐	☐
• Water Quality Management	☐	☒

Will the project produce substantial benefits to the general public, to communities, and to groups of landowners?								☒YES	☐ NO[3]
Can the project be installed by individual or collective landowners under alternative cost-sharing assistance?								☐ YES[3]	☒NO
Will the project have strong local citizen and sponsor support through agreements to obtain land rights, permits, contribute the local cost of construction, and carry out operation and maintenance.								☒YES	☐ NO[3]
Will the project take place in a Special Designated Area? (if yes, check applicable area below.)								YES	☐NO
Appalachia	☒	Delaware River Basin	☐	Susquehanna River Basin	☐	Tennessee Valley	☐		

1- For specific appropriations, the 250,000 acres is waived except for watershed projects with the flood prevention purpose.

2- Watersheds exceeding 250,000 acres can be broken up into smaller sub-watersheds.

3- The project will not meet the statutory requirements.

References:

16 USC 18 - §1004, Conditions for Federal assistance
7 CFR 611 - 11, Eligible Watershed Projects
Title 390, NWPM – 500.3 Eligible Purposes

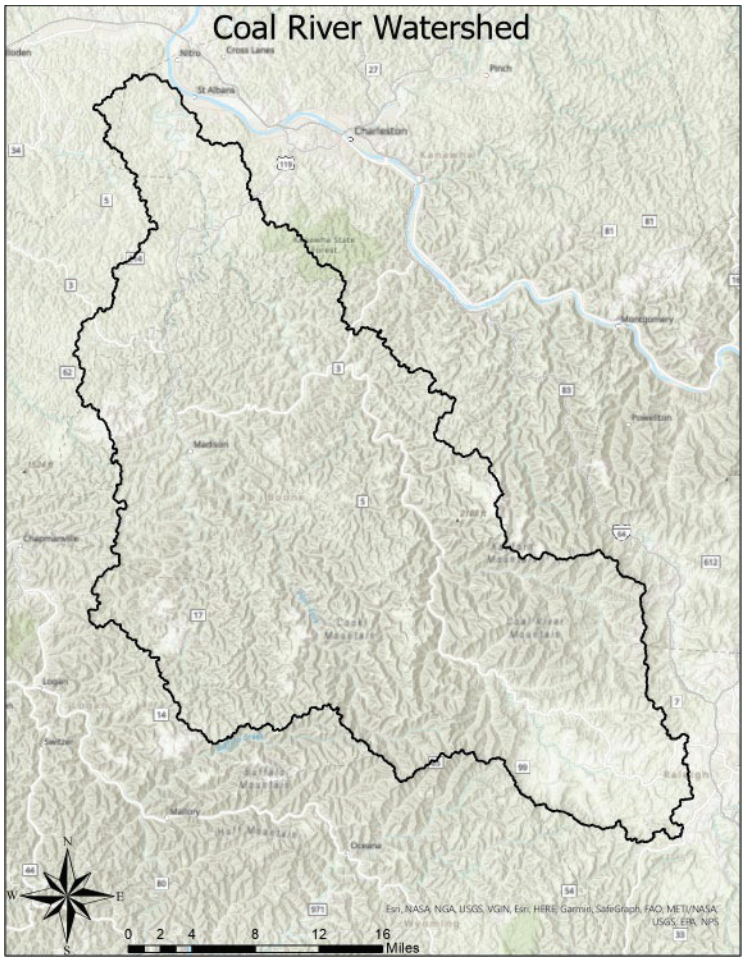
Potential for 20% Agricultural (Rural) Benefits

The triangular-shaped Coal River Watershed covers about 900 square miles, including almost all of Boone County and parts of Kanawha, Raleigh, Lincoln, Logan, and Putnam counties. The watershed is roughly 20 miles wide at its broadest and about 50 miles long at its longest. For purposes of this report, statistics for Boone County are used to describe the watershed. Boone County has a population of 21,055 (US Census 2020) with a population density of 43 persons per square mile. In comparison, the population density for the state of West Virginia is 77 people per square mile and nationally the population density is 94 people per square mile. As per the USDA definition, Boone County is considered rural because it has less than 50,000 people. Because it is rural, at least 20% of the benefits will meet the agricultural (rural) requirement. Populations potentially benefitting from a project would include rural residents and the general public.

References:

16 USC 18 - §1002, Definitions
Title 390, NWPM – 506.50 Glossary, MMM. Rural or Rural Communities

Project Overview	
Proposed Project Name	Coal River Watershed 8-digit HUC (05050009)
State	West Virginia
County	All of Boone County; portions of Kanawha, Raleigh, Lincoln, Logan, and Putnam Counties
Congressional District	1st Congressional District

USGS Hydrologic Unit Code (HUC) and Watershed Name	 Map of Coal River Watershed Boone, Kanawha, Raleigh, Lincoln, Logan, and Putnam Counties WV 8-digit HUC (05050009)
General Coordinates of the Watershed	Latitude 38.34175351467878, Longitude -81.84164698681667 (Coordinates of obsolete dam)

Project Setting	The Coal River Watershed is located mostly in MLRA 126, the Central Allegheny Plateau, with a small area in MLRA 125, the Appalachian Plateaus. The Coal River watershed is in the southern West Virginia coal mining region. The Big Coal River begins near Whitesville, WV with the convergence of Clear Fork and Marsh Fork. The river then flows generally northwest through Boone County, past the towns of Sylvester, Seth and Racine. Route 3 borders the Big Coal River as it passes through several river communities. The Little Coal River begins near Madison and joins the Big Coal River at Alum Creek. The Little and Big Coal Rivers create the Coal River, which extends from Alum Creek to the Kanawha River at St. Albans. The Kanawha flows west to join the Ohio River at Pt. Pleasant, West Virginia. The Ohio River eventually joins the Mississippi River at Cairo, Illinois. The Mississippi flows into the Gulf of Mexico. West Virginia has a humid continental climate. West Virginia experiences moderately cold winters and warm, humid summers. West Virginia has the highest average elevation east of the Mississippi River which helps moderate summer temperatures. The jet stream is located near or over the northeast during the winter bringing frequent storm systems to the watershed. Boone County, in an average year, receives 46 inches of rain and 26 inches of snow. The average summer high is 85 degrees Fahrenheit in July, and the average winter low is 23 degrees Fahrenheit in January.

Potential Project Area - Size	Coal River Watershed 8-digit HUC (05050009) 576,000 acres Project areas will be subwatersheds within the 8-digit HUC
Resource Information	
Soils	Boone County lies within Major Land Resource Area (MLRA) 125. MLRA 125 is on a dissected plateau that has narrow, level valley floors, narrow ridgetops, and steep side slopes. About 80 percent of the area is forested, mostly on the steep slopes and ridgetops. The valley floors are commonly used for urban development and small farms that produce crops and livestock. Coal mining, which was the major industry in the past, has altered the landscape throughout the MLRA. Cyclic beds of sandstone, siltsone, clay, shale, and coal of Pennsylvanian age make up the bedrock in most of this area. The dominant soil orders are Ultisols and Inceptisols. The soils in the area have a mesic or frigid soil temperature regime, a udic soil moisture regime, and mainly mixed mineralogy. They generally are moderately deep to very deep, excessively drained to somewhat poorly drained, and loamy. Soils derived from surface mining for coal are common in this MLRA.
Water	The quality of water making up the watershed is affected by surface and subsurface coal mining, solid waste management, and degraded forest and pastureland. The upland areas of the watershed produce high sediment loads during runoff producing rains. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.
Air	A portion of the watershed is in Kanawha County, which has degraded air quality and is listed as a non-attainment area by EPA.
Plants	The watershed provides for both agricultural crops as well as naturally vegetated areas utilized as wildlife habitat.
Animals	This area has animal resources consisting of game, non-game, and invasive species.

Energy	This area has various electrical, oil, and gas transmission facilities. Coal mines, both surface and deep mines, are abundant in this part of the state.
Human	Demographics: The U.S. Census 2020 reports the population of Boone County at 21,055 in 2020. The area is experiencing a population decline of about 1% per year. In contrast, between the 2010 and 2020 census, the population of West Virginia decreased by 3.2%.

Boone County WV Data & Demographics (As of July 1, 2023)

POPULATION	
Total Population	21,077 (100%)
Population in Households	20,933 (99.3%)
Population in Families	17,434 (82.7%)
Population in Group Quarters[1]	144 (0.7%)
Population Density	42
Diversity Index[2]	11

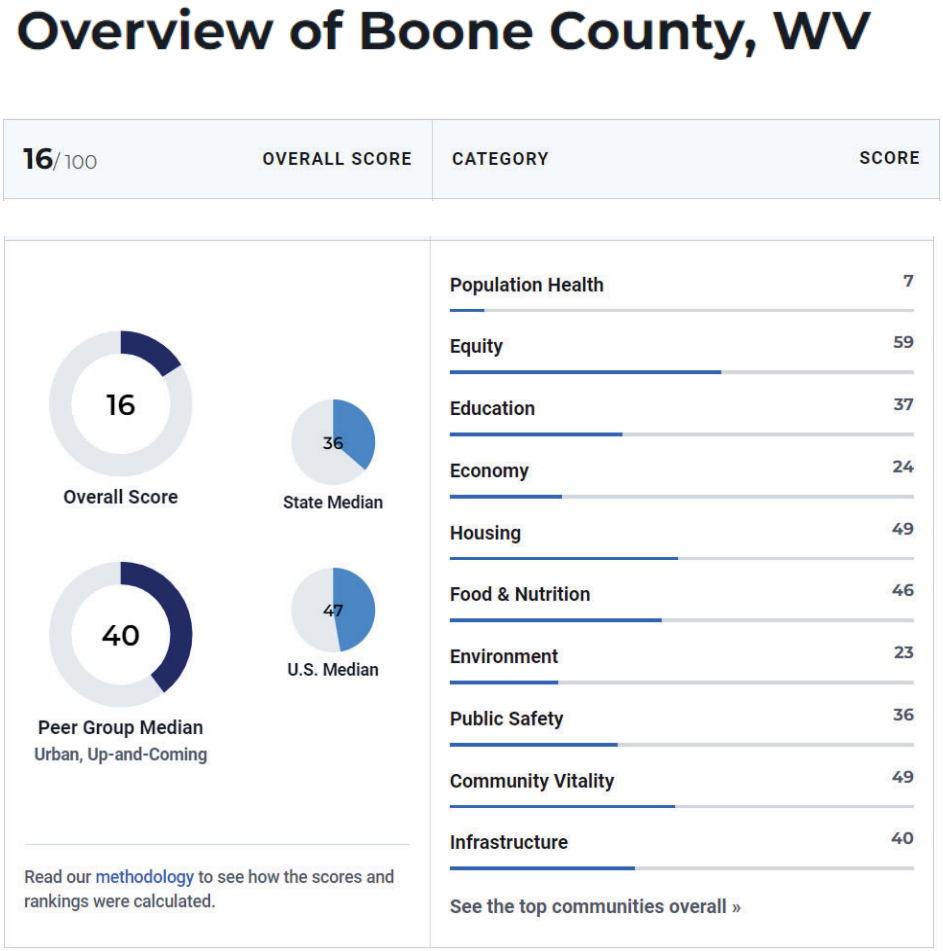
HOUSING	
Total HU (Housing Units)	9,947 (100%)
Owner Occupied HU	6,661 (67.0%)
Renter Occupied HU	2,004 (20.1%)
Vacant Housing Units	1,282 (12.9%)
Median Home Value	$93,630
Average Home Value	$132,619
Housing Affordability Index[3]	229

INCOME	
Median Household Income	$51,233
Average Household Income	$66,053
% of Income for Mortgage[4]	11%
Per Capita Income	$27,167
Wealth Index[5]	48
Socioeconomic Status Index[6]	Low (43.0)

HOUSEHOLDS	
Total Households	8,665
Average Household Size	2.42
Family Households	5,921
Average Family Size	3.00

Reference: [Boone County WV Data & Peer Group Rankings (hometownlocator.com)]

Quality of Life: According to USNews, Boone County scores less than the state and national benchmarks for quality-of-life indicators.

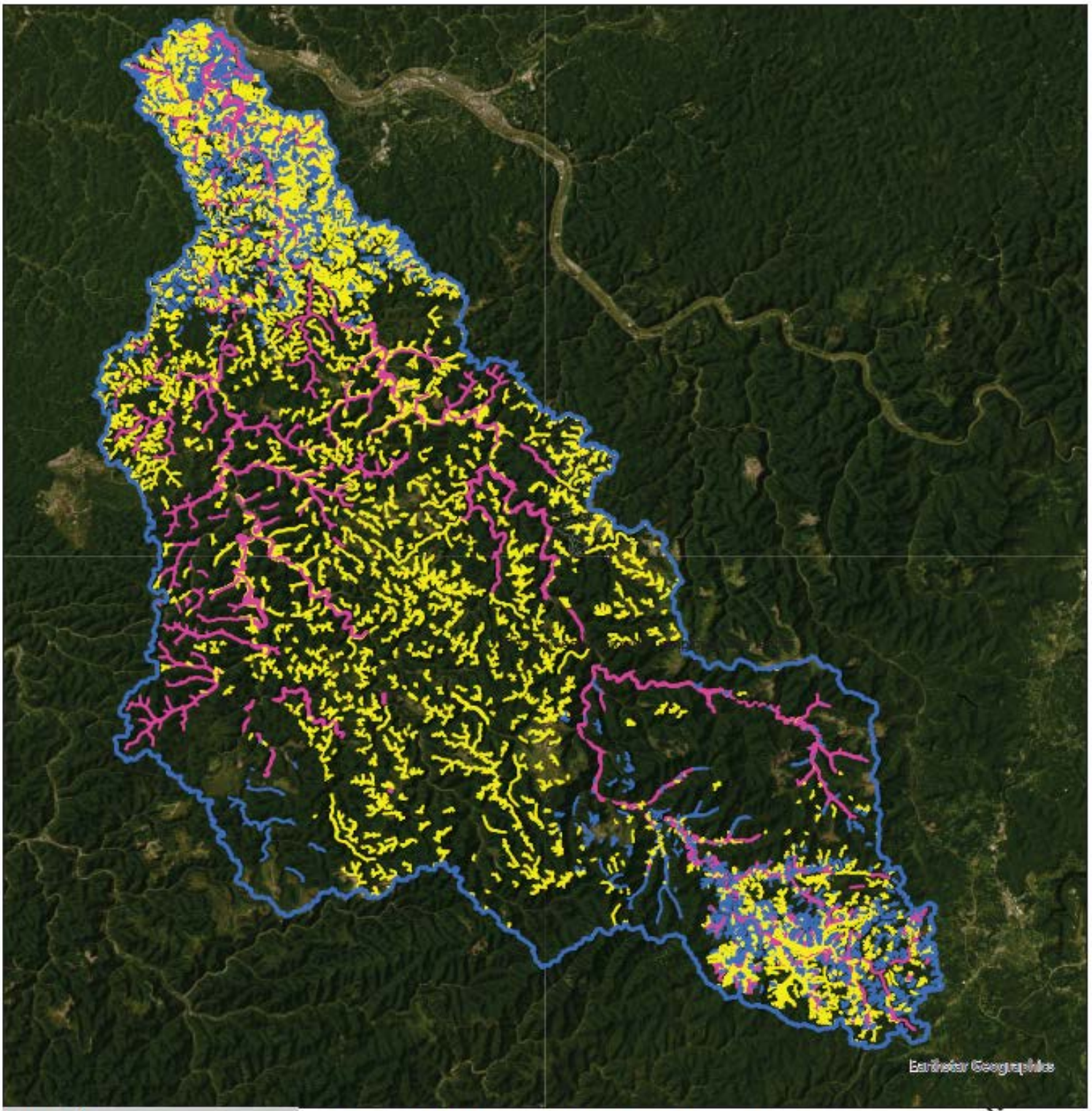


Reference: [How Healthy Is Boone County, West Virginia? | US News Healthiest Communities]

Resources of Special Concern	
Clean Water Act	Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered to be waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.
Clean Air Act	Kanawha County has impaired air quality.
Coastal Zone Management	NA
Coral Reefs	NA
Cultural Resources	There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.
Endangered & Threatened Species	There is a total of 17 Federally listed threatened, endangered, or candidate species potentially found in this watershed by the US Fish and Wildlife Service. According to West Virginia Department of Natural Resources, WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, a map of WV CFAs, and a list of SGCN for this watershed.

Environmental Justice	Environmental justice seeks fair treatment and meaningful involvement of all people and requires the identification of any disproportionately high and adverse effects from a proposed project on protected groups. Boone County is completely within the Appalachian Region. This county is designated as limited resource counties by USDA. it is designated as a 'distressed' county by the Appalachian Regional Commission, indicating that local economy is struggling. Boone County is 98.5% white. Black or African Americans make up less than 2% of the population. The poverty rate is 17.8%, above the WV poverty rate of 15.8% and above the national rate of 11.4%.
Essential Fish Habitat	NA
Floodplain Management	The purpose of floodplain management is to reduce flood damage. Floodplain management is the operation of community programs for preventative and corrective measures. These measures take a variety of forms and generally include zoning, division or building requirements, and special-purpose floodplain ordinances. Communities agree to adopt and enforce floodplain management ordinances to make flood insurance available to home and business owners. To date, 55 counties and 214 communities in West Virginia have voluntarily adopted and are enforcing local floodplain management ordinances that provide flood loss reduction building standards for new and existing development. Boone County has a major risk of flooding over the next few decades. In addition to damage on properties, flooding can impact access to utilities, emergency services, transportation, damage to agricultural lands and crops, and adversely impacts the overall well-being of both urban and rural communities located in the floodplain. For Boone County there is: -extreme risk to 6,572 out of 8,838 homes -extreme risk to 1,179 out of 1,696 miles of roads -extreme risk to 395 out of 472 commercial properties -extreme risk to 13 out of 82 infrastructure facilities -extreme risk to 24 out of 140 social facilities. Data obtained from Boone County, West Virginia Flood Factor® Report | Risk Factor

Invasive Species	Invasive species are found in the watershed. EDDMaps provides a web-based mapping system for documenting invasive species and pest distribution. See Appendix E for complete species lists. The lists are not specific to the watershed. However, they are based on a WV county level in which the watershed is located.
Migratory Birds/Bald & Golden Eagle Protection Act	Migratory birds and eagles utilize the Coal River Watershed habitats. There is a total of 13 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location. See Appendix E for complete list.
Natural Areas	Federal: There are no federally operated lands within the watershed. State: The West Virginia Division of Forestry manages Kanawha State Forest, of which a portion lies in the northeast corner of this watershed. The Big Ugly Wildlife Management Area and Chief Logan State Park, which are managed by WV Division of Natural Resources, are not within the watershed, however, are in close proximity to the west.
Prime and Unique Farmlands	Presently there are 1,548,266 acres of Prime Farmland, which accounts for 1.1% of land in the study area. Additionally, there are 28,474,038 acres of Farmland of Local Importance and 26,050,943 acres of Farmland of Statewide Importance. There are no farmland protection boards actively conserving land in the watershed.
Riparian Area	There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often forested or utilized as agricultural, urban, or residential purposes.
Scenic Beauty	Areas of potential scenic beauty in this watershed are typical of the Appalachian Plateau physiographic province and common to the region.
Wetlands	There are 16,312 acres of wetlands within the Coal River Watershed which consists of the following: 44.7 acres of Freshwater Emergent Wetlands; 195.7 acres of Freshwater Forested/Shrub Wetlands; 478.3 acres of Freshwater Pond; 321.9 acres of Lakes; and 15,271.1 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.
Wild and Scenic Rivers	All trout streams in Raleigh County are designated as “Waters of Special Concern.” There are no designated Wild and Scenic Rivers in or near the project area.



Legend

MUPOLYCoal

Farm Class

- All areas are prime farmland
- Farmland of local importance
- Farmland of statewide importance
- Not prime farmland

Coal River Watershed Farmland Classification

N

W E

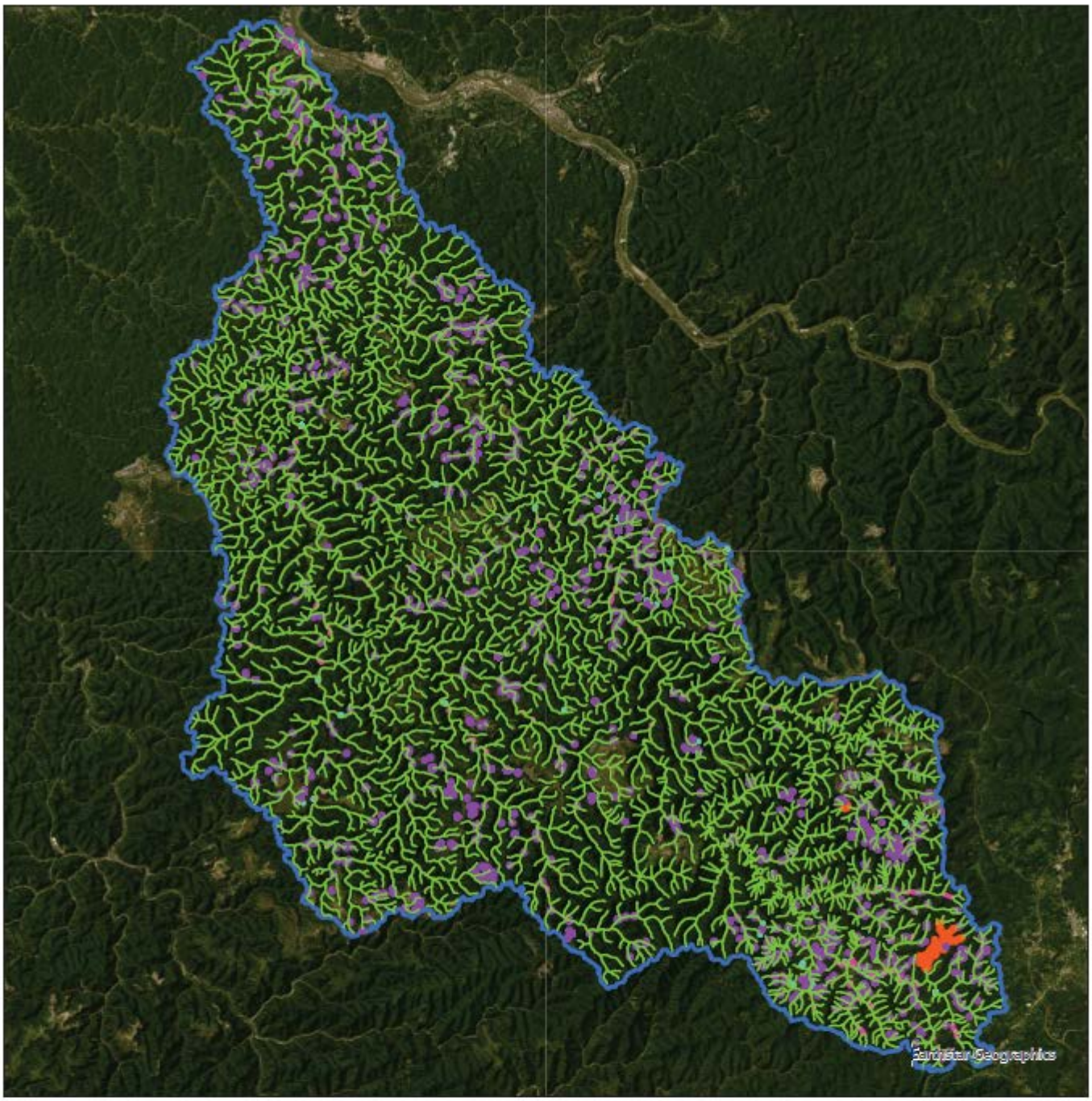
S

USDA is an equal provider, employer, and lender

USDA

0 2.25 4.5 9 13.5 18

Miles



Legend

WETLAND_TY

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Coal River Watershed National Wetlands Inventory

N

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USDA

USDA is an equal opportunity provider, employer, and lender

0 2 4 8 12 16

Miles

Proposed Project Purpose and Need Statement

The purpose of the proposed project is to address the resource concerns associated with an outdated dam and address resource concerns in the Coal River Watershed where landowners and municipalities are have issues with watershed protection, public recreation, public fish and wildlife, and water quality. It is anticipated that the PL 566 project purpose will be watershed protection.

Resource Concerns and Opportunities

The Federal Objective or the goal for the planning study according to the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies (PR&G) is a water resources project that reflects national priorities, protects the environment, and encourages economic development. The Coal River Watershed contains water resources concerns and opportunities that offer the potential for a watershed project that achieves the Federal Objective.

Resources	**Concerns**	**Opportunities**
Water	• Obsolete dam poses health hazard to general public. • Aquatic passage is blocked by obsolete dam, impairing habitat.	• Restore natural flow regime • Restore natural stream conditions • Improve aquatic organism passage
Soil	• Soil loss is likely due to OM depletion, compaction resulting in reduced infiltration on agricultural lands and urban lands, impervious surfaces. Erosion on farms is most likely from overgrazing bare soil areas.	• Reduce impacts to soils and improve soil health
Air	• Some areas of air quality non-attainment	• Monitor state air data for potential issues
Plant	• Lack of plant species diversity and presence of invasive species.	• Increase of plant diversity with the establishment of native regionally appropriate species.
Animals	• Lack of game and non-game species diversity and habitat diversity	• Provide appropriate game and non- game habitat.
Energy	• Potential damage to energy infrastructure from flooding • Reported water pumping issues during flood operations	• Efficiencies in energy use • Improvements to air quality
Human	• Public hazard created by obsolete dam	• Remove public hazard, improve public safety
Recreation	• Impaired recreational potential on Coal River	• Improve recreational experience for local residents
Environmental Justice	• County economy is 'at risk', unable to fully capitalize on natural resources that could support local economy • Declining tax revenue for towns	• Remove obsolete dam to improve local environment for all residents
Cultural Resources / Historic Properties	• Full range of archaeological sites (Paleo-Indian to recent past) and historic properties eligible for listing on the National Registry of Historic Places	• Tribal and SHPO consultation

Potential Effects of Proposed Alternatives on SWAPA + E + H Resources and Resources of Special Concern

Use: *+ - Positive Impact* *- - Negative Impact* *0 - No Impact (effects for Alt 2 unknown at this stage*)*

Resource Concerns: SWAPA + Energy + Human		
	Alt 1 – No Federal Action: Description: The sponsor does not implement any watershed measures using Federal funds	**Alt 2 – All other alternatives:** Description: Combination of structural and nonstructural measures using federal funds
Soil	**-**	**+**
Water	**-**	**+**
Air	**0**	**+**
Plants	**-**	**+**
Animals	**-**	**+**
Energy	**0**	**+**
Human	**-**	**+**
Clean Air Act	**0**	**+**
Clean Water Act/Waters of the U.S.	**0**	**+**
Coastal Zone Management	**0**	**0**
Coral Reefs	**0**	**0**
Cultural Resources/Historic Properties	**0**	**-**
Endangered & Threatened Species	**0**	**+**
Environmental Justice	**0**	**+**
Essential Fish Habitat	**0**	**0**
Floodplain Management	**0**	**+**
Invasive Species	**0**	**+**
Migratory Birds/Bald and Golden Eagle Protection Act	**0**	**+**
Natural Areas	**0**	**+**

*-Effects for Alt 2 unknown at this time

Opportunities

Opportunities exist to provide watershed protection that will restore habitat, improve water quality, and enhance recreational access. The sponsor is willing to participate in the PL-566 Watershed Program, allowing NRCS to potentially implement a combination of practices that are designed to address resource concerns.

State, Tribal, Federal Stakeholder Engagement

Notification letters were sent out to the West Virginia State Historic Preservation Office, the Conservation Agency, the Cherokee Nation, the Eastern Band of the Cherokee, and the Eastern Shawnee Tribe. There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.

Tribal Name	Date Sent
Cherokee Nation	August 1st, 2023
Eastern Band of Cherokee Indians	August 1st, 2023
Eastern Shawnee Tribe of Oklahoma	August 1st, 2023

Potential Alternatives

During the PIFR process, broad categories of measures were identified to meet the stated purpose and need for the proposed project and alternatives were formulated according to PR&G criteria of completeness, effectiveness, efficiency, and acceptability. While all the potential alternatives listed may not be carried forward for full analysis during the planning process, this table documents that there are reasonable alternatives available to analyze and develop. The WV planning team also recognizes that during the planning process the NRCS team and local sponsors are likely to determine that the best alternative for the watershed is a combination of both nonstructural and structural measures.

List of Alternatives

Alternatives	Possible Positive Impacts & Effects	Possible Adverse Impacts & Effects
No action	-No expenditure of federal or local funds -No new maintenance requirements -No change in recreational experience -No change in aquatic habitat	-No improvement in watershed -Structure remains out of compliance -Hazard to public and infrastructure increases -Maintenance becomes more expensive
Alt 1 – Remove obsolete dam	-Restore stream and riparian habitat -No long-term maintenance cost -Short term construction jobs -Majority or all federal funds -Improve recreation experience -Improve water quality -Increase in fish and wildlife populations -Re-introduction of natural occurring sediments back into the stream system	-Local funding may be required -Change in aquatic habitat -Change in recreational experience -Release of sediment built up behind obsolete dam -Re-introduction of natural occurring sediments back into the stream system
Alt 2 – Remove dam, install Land treatment measures	-Restore forests and ag land to their production potential -No long-term maintenance cost -Majority or all federal funds -Reduction in sediment and nutrients -Increased outdoor recreation -Improved water quality -Increase in fish and wildlife populations	-Some local funding may be required -Successful project depends on private landowner cooperation -Maintenance burden on landowners -Change in aquatic habitat -Change in recreational experience -Release of sediment built up behind obsolete dam
Alt 3 – Combination of alternatives	- Restore forests and ag land to full production potential - No limit to federal and local funding - Full combination of alternatives available from all agencies - No limit to the sponsors' funding or abilities to address watershed concerns	-lack of fiscal constraints may result in over spending - no limits on planning and implementation may complicate project opportunities

Facilitating Factors

The Capitol Conservation District is willing to work with NRCS to see the project through completion.

Obstructing Factors

Local funding is dependent on state appropriations and local government budgets.

Environmental Document

A potentially viable alternative for a proposed watershed project involves the removal of an obsolete dam on Coal River, improving the watershed conditions. Additional purposes will be assessed in more detail if planning is authorized. At this point in the planning process, the interdisciplinary team has determined that the environmental document for the project may be an environmental assessment. However, it is acknowledged that an Environmental Impact Statement could be required if significant or controversial issues arise during further planning.

Sponsors

The Capitol Conservation District is ready, willing, and able to be sponsors for a potential watershed project in the Coal Rivier Watershed, an 8-digit HUC (05050009) watershed. This entity meets the PL 83-566 sponsorship criteria for this potential watershed project and have demonstrated success on past projects. All sponsors who take an active role in project will complete the WS-4, PIFR Sponsor Declaration form. A summary of the sponsor responses will be included in this section. Completed WS-4 - PIFR Sponsor Declaration is included in Appendix B.

Sponsor Will:	Assist in Planning	Land Rights / Eminent Doman	Local Cost Share	O/M Funds	Permits	Land Treatment
Capitol Conservation District	Yes	Yes	Yes	Yes	Yes	Yes

Sponsor will:

- Assist in the locally led planning effort.
- Obtain needed land rights including the use of power of eminent domain, if necessary.
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs.
- Provide funds for continuing operation and maintenance actions.
- Obtain required permits and approvals at sponsor cost:
- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs.
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, sponsor will sign a Memorandum of Understanding (MOU) with NRCS.

Potential Cooperating Agencies

Agency	Contact Information	Type of Involvement
US Army Corps of Engineers	USACE, Huntington District 502 8th St, Huntington, WV 25701 (304) 399-5353	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
US Fish and Wildlife Services	USFWS 6263 Appalachian Highway Davis, WV 26260 501-513-4470 FW5_WVFO@fws.gov	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
West Virginia Department of Environment Protection (WVDEP)	WVDEP 601 57th Street SE Charleston, WV 25304 (304) 926-0499	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
USDA Farm Service Agency	USDA-FSA 1550 Earl Core Road Morgantown, WV 26505 (304) 284-4800	Regulatory [ ]
		Informed [X]
		Prepare permits or letters of permission document [ ]
		Provide input [ ]
West Virginia Historic Preservation Office (WVSHPO)	WVSHPO Capitol Complex 1900 Kanawha Boulevard, East Charleston, WV 25305-0300 (304) 558-0220	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]

Potential Stakeholders

Stakeholder	Role	Resources	Contribution
Capitol Conservation District	Sponsor	Cost-share funds	For Plan/EA attain permits and assists with Public Scoping Meetings, Mailings, and overall administration of the project.
USDA-NRCS	Lead Agency for Plan-EA, FA/TA, Reviews	Funding assistance, Technical Reviews	Reviews for project location, inventory needs, Plan-EA supplement
Army Corps of Engineers (USACE) Funding assistance, Technical Reviews	Section 404 permit, Section 10 permit, and section 408 review	Technical Reviews, Wetlands-Waters of the U.S. Jurisdiction	Permitting, technical review
Catawba Indian Nation- Chief Bill Harris	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Catawba Indian Nation- Tribal Historic Preservation Officer and Catawba Cultural Center Executive Director Dr. Wenonah G. Haire	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Cherokee Nation- Principal Chief Chuck Hoskin	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Cherokee Nation- Tribal Historic Preservation Officer Elizabeth Toombs	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Eastern Band of Cherokee Indians- Principal Chief Richard Sneed	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Eastern Band of Cherokee Indians- Tribal Historic Preservation Specialist Russell Townsend	Permit- Cultural Review	Review of Project APE	Permit for Project APE
West Virginia Historic Preservation Office	Permit- Cultural Review	Review of Project APE	Permit for Project APE
WVDEP	Permits	Review for Permits	Review for Permits
WVDNR	Partner	Review of Plan – ED	Review of Plan - ED

Notifications

If a watershed plan – environmental assessment is undertaken, the NRCS must notify publish a notice of intent to the public and notify key federal and state agencies as described in the National Watershed Manual. (Executive Order 10584 Section 3). Notification letters were sent on 04-20-2023 to WV Governor's Office; WV USFWS Field Office; and Army Corps of Engineers District Offices in Baltimore, Huntington, and Pittsburgh regions.

Estimated Project Implementation Timeline

Planning Start	October	2025
Planning End	October	2029 (36 months typically)
Design Start	December	2029
Design End	December	2031 (24 months typically)
Construction Start	March	2032
Construction End	November	2033 (18 months typically)

Recommendation

This preliminary investigation and feasibility report has been completed and submitted for approval to:
Jon Bourdon, West Virginia State Conservationist.
By:
Name: Don Dodd Title: Water Resources Planning Specialist Date: : July 12, 2022
Organization: Natural Resources Conservation Service (NRCS)

It has been determined that this potential PL-566 watershed operations project:

Does	Does Not	
☒	☐	… meet the statutory acreage, volume/capacity of structure and recreational limit requirements;
☒	☐	… meet the requirements of one or more Watershed Operations authorized purposes;
☒	☐	… have the potential for a minimum of 20% agricultural, or rural, benefits;
☒	☐	… have one or more viable alternatives;
☒	☐	… have potential project sponsor(s) that meet and agree to all terms of responsibilities;
☐	☒	… have apparent insurmountable obstacles.

Preparer Signature Signature: HANNAH THACKER Digitally signed by HANNAH THACKER Date: 2024.01.08 13:40:50 -05'00' Date:

State Watershed Operations Program Manager Signature: CHRISTI HICKS Digitally signed by CHRISTI HICKS Date: 2024.01.22 14:03:12 -05'00' Date:

State Technical Lead (SRC, SCE, Other) Signature: LEWTON DEICHERT Digitally signed by LEWTON DEICHERT Date: 2024.01.23 10:08:38 -05'00' Date:

	Not recommended for planning funding
X	Accepted and recommended for Planning Funding

State Conservationist Signature: JEFFREY BARR Digitally signed by JEFFREY BARR Date: 2024.01.23 11:40:48 -05'00' Date:

Glossary

Rural – All territories of a State that are not within the outer boundary of any city or town that has a population of 50,000 or more according to the latest decennial census of the United States (2010 Census Urban and Rural Classification and Urban Area Criteria). [Source Title 390 – NWPM Part 506.50 Glossary, MMM]

Appendix

- Appendix A: Sponsor Letter of Request
- Appendix B: WS-4 – PIFR Sponsor Declaration Forms
- Appendix C: Preliminary Environmental Evaluation (CPA 52)
- Appendix D: Forecasted NRCS Staffing Needs
- Appendix E: Supporting Information
- Appendix F: Cost Estimate

Appendix A

Sponsor Letter of Request

CAPITOL CONSERVATION DISTRICT

418 New Goff Mountain Road
Suite 102
Cross Lanes, WV 25313
304-759-0736
Email: ccd@wvca.us

January 23, 2023

Jon Bourdon,
State Conservationist
Natural Resources Conservation Service
1550 Earl Core Road, Suite 200
Morgantown, WV 26505

Dear Mr. Bourdon:

We request NRCS Watershed Program planning assistance for a potential Public Law (PL) 566 project in Kanawha County, hydrologic unit code (HUC 5050009). A watershed project could potentially improve the water quality and address other resource concerns in the Coal River Watershed.

The Capitol Conservation District is a local unit of government with an interest in this watershed. We understand that there is no cost to us during the preliminary feasibility phase and there is no obligation to continue with the project if feasibility is not likely. We also understand that additional local sponsors may join with us in the future. Should the study evolve into a formal PL566 watershed plan, we understand, as sponsors, that our responsibilities will include:

· Assisting in the locally led planning effort,

· Contributing a share of the project costs, as determined by NRCS, by providing funds or eligible services necessary to undertake the activity,

· Before being credited with the value of any in-kind contributions for in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS,

· Obtaining any necessary real property rights, by eminent domain, if necessary,

· Obtaining any needed water rights, and regulatory permits at the Sponsor's cost,
· Agreeing to provide for any required operation and maintenance of the completed measures

We look forward to working with NRCS staff to complete a Preliminary Investigation Feasibility Report (PIFR) to provide reasonable assurance that a potential watershed project can be

developed that addresses a PL 566 purpose and that there are no apparent insurmountable obstacles to the completion of that project.

The names, addresses, and telephone numbers of the administrative and technical contact persons in our organization are as follows:

Capitol Conservation District
418 New Goff Mountain Road
Suite #102
Cross Lanes, WV 25313
304-759-0736 ext. 5
Diane Lumadue/Secretary-304-421-0732
Terry Hudson/Chairman-304-552-6557

Please contact them for any additional information that you might need in assessing our request.

Sincerely,

Terry Hudson
Chairman

Appendix B.
PIFR Sponsor Declaration Forms

Watershed Programs Standard Memorandum
Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration

Form Number: WS-4
Version 2021-03-04

State: WV County: Kanawha Watershed: Coal River

Project Name: Coal River PIFR

Sponsor's Name:	**Capitol Conservation District**		
Sponsor's Mailing Address:	**418 Goff Mountain Rd, Cross Lanes, WV 25313**		
Contact Name:	**Terry Hudson**	**Phone:**	**304-552-6557**
Title:	**Chairman**	**Email:**	**HudsonFarmsCSA@gmail.com**
Sponsor Website:	**wvca.us/district/ccd.cfm**		

Description of the existing condition in the watershed that would be addressed through a Watershed Flood Prevention Operations program project.

The Coal River Watershed has concerns with aquatic organism passage, sedimentation, water quality, threats to public health, and watershed protection. State agencies and watershed associations have taken steps to correct water quality concerns with stream habitat improvement and land treatment programs, but there are still several areas of concern. Obsolete low head dam at Tornado, WV impedes fish and wildlife passage and is a threat to public health as the river becomes a more popular destination for water recreation.

Potential benefits of a Watershed Flood Prevention Operations program project.

Benefits of a project could provide watershed protection and fish & wildlife habitat improvement by reducing sedimentation, increasing water quality, reducing flood damages and sedimentation in the Coal River Watershed in Kanawha County, WV.

Watershed Programs Standard Memorandum
Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration

Form Number: WS-4
Version 2021-03-04

State: WV County: Kanawha Watershed: Coal River

Project Name: Coal River PIFR

SPONSOR WILL:

- Assist in the locally led planning effort: YES __x__ NO _____
- Obtain needed land rights including the use of power of eminent domain, if necessary: YES __x__ NO _____
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs: YES __x__ NO _____
- Provide Funds for continuing Operation and Maintenance actions: YES __x__ NO _____
- Obtain required permits and approvals at Sponsor cost: YES __x__ NO _____
- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs: N/A __x__ YES _____ NO _____
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS: YES __x__ NO _____

Authorized Representative of Sponsor

Name (printed): Terry Hudson **Title:** Chairman

Signature: Terry D Hudson **Date:** 11-20-2023

Appendix C.
Preliminary Environmental Evaluation (CPA 52)

U.S. Department of Agriculture — NRCS-CPA-52
Natural Resources Conservation Service — 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name: Capitol Conservation District

B. Conservation Plan ID # (as applicable): Coal River PIFR
Program Authority (optional): PL-566

C. Identification # (farm, tract, field #, etc. as required):
Coal River PIFR, Kanawha County, WV (HUC 05050009)

D. Client's Objective(s) (purpose):
The purpose of this project is to provide watershed protection and agricultural water management by reducing flood water damages, erosion and sedimentation loading in the Coal River Watershed.

E. Need for Action:
The existing water impoundment in Coal River Watershed is no longer functioning as its intended purpose and poses human safety concerns as well as concerns related to fish passage and general aquatic habitat. Water quality within the watershed is also negatively impacted by agricultural and residential contaminants as well as soil erosion and sedimentation. Flooding is of localized concern within the watershed.

H. Alternatives

No Action √ if RMS ☐	*Alternative 1* √ if RMS ☐	*Alternative 2* √ if RMS ☐
No action alternative- Fish passage and stream habitat would continue to be negatively impacted by the dam on Coal River. The dam would continue to pose a threat to human health and safety. Water quality issues and soil erosion would persist without focused implementation of land based conservation practices.	Removal of existing dam through focused technical and financial assistance through the Watershed Protection and Flood Prevention Act would result in restoration of the stream and riparian habitat.	Natural Stream Restoration would restore the stream and riparian habitat to its natural function. Watershed Protection and Flood Prevention Act funding in conjunction with traditional Farm Bill programs, such as EQIP or NWQI, would focus technical and financial assistance to install practices typically associated with natural stream restoration.

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process.
(See FOTG Section III - Resource Planning Criteria for guidance).

I. Effects of Alternatives

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	*No Action* — **Amount, Status, Description** *(Document both short and long term impacts)*	*No Action* — √ if does NOT meet PC	*Alternative 1* — **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 1* — √ if does NOT meet PC	*Alternative 2* — **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 2* — √ if does NOT meet PC
SOIL						
Sheet and rill erosion Sedimentation caused by erosion in the uplands of the watershed negatively impact Coal River and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages.	Continued degradation of the resource without any federal action.	☐ NOT meet PC	Decommissioning structures could potentially increase the amount of soil erosion in the short term as disturbed areas are revegetated. There would be a transition back to naturally occurring in the streambed.	☐ NOT meet PC	No effect to upland erosion. Sedimentation caused by stream bank erosion would be decreased by the stabilization of streambanks.	☐ NOT meet PC
WATER						
Ponding and flooding Flooding has been a historical issue in the watershed with the expected risk of flooding increasing over the next few decades as storms become more frequent and severe, and as the infrastructure ages. Flooding is a threat to property, access to utilities, emergency services, transportation, agricultural land, and crops.	Residences, businesses, and agricultural lands would continue to endure periodic flooding as storm frequency and intensity trends continue.	☐ NOT meet PC	Removal of obsolete dam in the Coal River is not expected to have any effect on flooding concerns within the watershed.	☐ NOT meet PC	Natural stream restoration could increase the channel's capacity to hold flood waters.	☐ NOT meet PC

Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Coal River and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.	Resources would continue to be degredated. The dam would not allow for the stream flow to function as normal, causing unnatural scouring and sediment deposits	☐ NOT meet PC	Removal of the dam would allow for the stream to return to its natural conditions, allowing for typical movement of sediment within the waterway during high flow events.	☐ NOT meet PC	There would be a reduction in sediments entering the watershed. Water quality would be beneficially effected and result in more outdoor recreation opportunities.	☐ NOT meet PC
Nutrients transported to surface water Water quality is negatively affected by nutrients, failing septic systems, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources.	Continued degradation of the resource without any federal action. Upland contaminants from agricultural operations and residences would continue to negatively effect water quality.	☐ NOT meet PC	Water quality for aquatic habitat would increase due to increased flow and oxygenation of water. Water quality issues related to agricultural and residential contaminants would persist.	☐ NOT meet PC	There would be a reduction of nutrients in surface water with the exclusion of livestock from the stream in conjunction with natural stream and riparian area restoration.	☐ NOT meet PC
F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)**					
	No Action		***Alternative 1***		***Alternative 2***	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified The watershed is not in an area recognized for regularly having impaired air quality or any significant air quality issues.	Air quality would not be impacted with no action.	☐ NOT meet PC	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The increases are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC	No effect	☐ NOT meet PC
PLANTS						
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat.	Riparian area composition would continue to be impacted by invasive species.	☐ NOT meet PC	Removal of dam would likely have minimal effects on plant structure and composition. Without control measures implemented, invasive species would persist to the detriment of the riparian area.	☐ NOT meet PC	Improved riparian areas will provide more naturally occurring plant species. Fencing streams and restoration of riparian areas could result in a loss of pasture or crop land.	☐ NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 18 threatened, endangered, or candidate species found in the watershed.	Wildlife would continue to be impacted by invasive species competition with native species that provide habitat, food, and cover.	☐ NOT meet PC	Terrestrial habitat may be adversely effected in the short term during construction. Once structures are removed, early successional habitat would provide a benefit to wildlife.	☐ NOT meet PC	Terrestrial habitat would be improved through the creation of riparian areas.	☐ NOT meet PC
Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	Continued degradation of the resources with continued sedimentation in the stream negatively impacting aquatic invertebrate habitat.	☐ NOT meet PC	Aquatic habitat would be improved for invertebrates with natural flows restored. Fish passage would be possible with the removal of the dam.	☐ NOT meet PC	Aquatic habitat would be improved by installing practices return the streambed to a more natural value and function.	☐ NOT meet PC

ENERGY							
No resource concern identified This area has various electrical, oil, and gas transmission facilities. Coal mines, both surface and deep mines, are abundant in this part of the state.	No effect	☐ NOT meet PC	No effect	☐ NOT meet PC	No effect	☐ NOT meet PC
Human Economic and Social Considerations						
Public Health and Safety The presence of the dam poses a threat to public health and safety as it creates abnormal and dangerous flow conditions and currents.	There would continue to be a threat to public safety as well as missed recreation opportunity due to the overall health and structure of the stream.		Decommission of dam would result in increase public safety. It would also restore the stream to more natural conditions, allowing for increased recreational opportunities such as fishing, hiking, bird watching, etc within the watershed		While this alternative does not provide substantial, additional protection from flooding and risk of loss of life, it would create opportunities for increased outdoor recreation that is associated with healthy streams. Implementation of this alternative would likely reduce erosion, sedimentation, and flooding of roads and bridges, resulting in increased safety for the public and reduction in maintenance activates. There would also be less disruptions to regular traffic, as well as emergency vehicles.	

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	No Action		***Alternative 1***		***Alternative 2***	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act *Guide Sheet* The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	No Effect	☐	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐
●Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	No Effect	☐	May Affect Construction involved with the removal of the dams could result in the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐	May Affect Installation of any structures within the stream that will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐
●Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐

●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	No Effect	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 18 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.	No action may have the potential to negatively impact federally listed aquatic species through continued sedimentation and habitat destruction.	☐	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐
Environmental Justice *Guide Sheet* Boone County is completely within the Appalachian Region. This county is designated as limited resource counties by USDA. it is designated as a 'distressed' county by the Appalachian Regional Commission, indicating that local economy is struggling. Boone County is 98.5% white. Black or African Americans make up less than 2% of the population. The poverty rate is 17.8%, above the WV poverty rate of 15.8% and above the national rate of 11.4%.	No Effect	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐
●Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐	No Effect	☐	No Effect	☐
Floodplain Management *Guide Sheet* Boone County has a major risk of flooding over the next few decades.	No Effect	☐	May Affect Floodplain management would be a consideration during the dam removal and design to bring stream back to its natural state.	☐	May Affect Floodplain management would be a consideration during the design process of natural stream restoration and would likely be benefited.	☐

Invasive Species *Guide Sheet* Invasive species are found in the watershed.	No Effect Continued expansion on invasive species.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐
●Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Coal River Watershed habitats. There is a total of 13 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Bids of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐
Natural Areas *Guide Sheet* There are no state or federally operated lands within the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
Prime and Unique Farmlands *Guide Sheet* Prime Farmland accounts for 1.1% of land in the study area. There are no farmland protection boards actively conserving land in the watershed.	No Effect	☐	No Effect Conversion of prime and unique farmlands is not anticipated with this alternative.	☐	No Effect Conversion of prime and unique farmlands is not anticipated with this alternative.	☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often forested or utilized as agricultural, urban, or residential purposes.	No Effect Continued degradation of riparian land as streambanks erode and invasive species dominate regrowth.	☐	May Affect There are riparian areas present in or near the project area and may have the potential to be impacted.	☐	May Affect Riparian areas will be enhanced as part of this alternative.	☐
Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of the Appalachian Plateau physiographic province and common to the region.	No Effect	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐

●Wetlands *Guide Sheet* There are 16,312 acres of wetlands within the Coal River Watershed which consists of the following: 44.7 acres of Freshwater Emergent Wetlands; 195.7 acres of Freshwater Forested/Shrub Wetlands; 478.3 acres of Freshwater Pond; 321.9 acres of Lakes; and 15,271.1 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	No Effect	☐	No Effect Action is not likely to negatively impact any wetlands in the watershed.	☐	No Effect Action is not likely to negatively impact any wetlands in the watershed.	☐
●Wild and Scenic Rivers *Guide Sheet* There are no designated Wild and Scenic Rivers in or near the project area.	No Effect	☐	No Effect	☐	No Effect	☐

K. Other Agencies and Broad Public Concerns	***No Action***	***Alternative 1***	***Alternative 2***
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	None	Construction related to the decommissioning of existing structures could involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation may also be required.	Implementation of natural stream restoration structures must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Absent the proper and increased application of conservation practices, cumulative effects will likely lead to continued environmental degradation.	Decommissioning of structures could help restore the function of the stream and riparian area, provide short term job creation, and return the local tax base with land usage.	Natural stream restoration would benefit the overall health of the stream and provide additional outdoor recreational opportunities. When applied through out the watershed, the cumulative effects would reduce the impacts of flooding.
L. Mitigation (Record actions to avoid, minimize, and compensate)	None	None	None
M. Preferred Alternative — √ preferred alternative	☐	☐	☐
M. Preferred Alternative — Supporting reason		Decommissioning of structures within the watershed would result in stream and riparian area restoration.	Natural stream restoration would benefit the overall heath of the stream.
N. Context (Record context of alternatives analysis)	local	local	local

The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.

U.S. Department of Agriculture | NRCS-CPA-52
Natural Resources Conservation Service | 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name: Capitol Conservation District

B. Conservation Plan ID # (as applicable): Coal River PIFR
Program Authority (optional): PL-566

C. Identification # (farm, tract, field #, etc. as required):
Coal River PIFR, Kanawha County, WV (HUC 05050009)

D. Client's Objective(s) (purpose):
The purpose of this project is to provide watershed protection and agricultural water management by reducing flood water damages, erosion and sedimentation loading in the Coal River Watershed.

E. Need for Action:
The existing water impoundment in Coal River Watershed is no longer functioning as its intended purpose and poses human safety concerns as well as concerns related to fish passage and general aquatic habitat. Water quality within the watershed is also negatively impacted by agricultural and residential contaminants as well as soil erosion and sedimentation. Flooding is of localized concern within the watershed.

H. Alternatives

Alternative 3 √ if RMS ☐	*Alternative 4* √ if RMS ☐	*Alternative 5* √ if RMS ☐
Combination of all alternatives- Dam Removal, Land Treatment, Stream Restoration, and Green Infrastructure Strategic installation of a combination of all practices and structures evaluated in other alternatives could more fully address concerns associated with flooding, erosion and sedimentation, water quality, recreation, and water supply. Technical and financial assistance would be focused in the area through the Watershed Protection and Flood Prevention Act as well as traditional Farm Bill programs such as CTA, EQIP and NWQI, along with funding and in kind services provided by local sponsors		

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

I. Effects of Alternatives

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	*Alternative 3* **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 3* √ if does NOT meet PC	*Alternative 4* **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 4* √ if does NOT meet PC	*Alternative 5* **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 5* √ if does NOT meet PC
SOIL						
Sheet and rill erosion Sedimentation caused by erosion in the uplands of the watershed negatively impact Coal River and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages.	Removal of obsolete dam, land treatment practices, natural stream restoration and green infrastructure would reduce soil erosion across all land uses and reduce sediment loads in waterways.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
WATER						
Ponding and flooding Flooding has been a historical issue in the watershed with the expected risk of flooding increasing over the next few decades as storms become more frequent and severe, and as the infrastructure ages. Flooding is a threat to property, access to utilities, emergency services, transportation, agricultural land, and crops.	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure would reduce sedimentation of streams to allow more capacity during flood events and allow for more water retention and controlled flow from flood control dams and rain gardens/wetlands.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC

Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Coal River and its tributaries. Sediment loading contributes to reduced channel capacity, further exasperating flood damages. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events.	Strategic installation of land treatment practices, natural stream restoration and green infrastructure as well as removal of obsolete dam would reduce sediment loads in waterways.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
Nutrients transported to surface water Water quality is negatively affected by nutrients, failing septic systems, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources.	Strategic installation of flood control structures, land treatment practices, natural stream restoration and green infrastructure would reduce nutrient transportation to waterways	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)** ***Alternative3*** **Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	***Alternative 4*** **Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	***Alternative 5*** **Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified The watershed is not in an area recognized for regularly having impaired air quality or any significant air quality issues.	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The increases are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
PLANTS						
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat.	Plant structure and composition would be improved on cropland and pasture land, riparian areas would be restored to natural, native vegetation, hydrophytic vegetation would benefit from wetland restoration and green infrastructure.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 18 threatened, endangered, or candidate species found in the watershed.	Terrestrial habitat would be improved through the implementation of wildlife oriented land treatment practices, riparian areas created as part of natural stream restoration and green infrastructure, and creation/enhancement of wetlands. Aquatic organism passage would be increased with the removal of dam.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	The effects of sedimentation on aquatic wildlife would be significantly controlled with a strategic implementation of all alternatives previously evaluated.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC

ENERGY						
No resource concern identified This area has various electrical, oil, and gas transmission facilities. Coal mines, both surface and deep mines, are abundant in this part of the state.	No effect	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
Human Economic and Social Considerations						
Public Health and Safety The presence of the dam poses a threat to public health and safety as it creates abnormal and dangerous flow conditions and currents.	Strategic planning and installation of all previously evaluated alternatives would eliminate the thread to human safety posed by the dam and increase overall watershed and stream health. Construction would result in a short term creation of jobs in the area. The improved habitat would also improve the recreation opportunities in the area					

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	Alternative 3		*Alternative 4*		*Alternative 5*	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act *Guide Sheet* The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐		☐		☐
●Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	May Affect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐		☐		☐
●Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐		☐		☐
Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐		☐		☐

●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐		☐		☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 18 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.	May Affect The structural alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐		☐		☐
Environmental Justice *Guide Sheet* Boone County is completely within the Appalachian Region. This county is designated as limited resource counties by USDA. it is designated as a 'distressed' county by the Appalachian Regional Commission, indicating that local economy is struggling. Boone County is 98.5% white. Black or African Americans make up less than 2% of the population. The poverty rate is 17.8%, above the WV poverty rate of 15.8% and above the national rate of 11.4%.	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐		☐		☐
●Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐		☐		☐
Floodplain Management *Guide Sheet* Boone County has a major risk of flooding over the next few decades.	May Affect This alternative will result in the protection of floodplains due to the decreased impacts of flooding.	☐		☐		☐

Invasive Species *Guide Sheet* Invasive species are found in the watershed.	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐		☐		☐
●Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Coal River Watershed habitats. There is a total of 13 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Bids of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐		☐		☐
Natural Areas *Guide Sheet* There are no state or federally operated lands within the watershed.	No Effect	☐		☐		☐
Prime and Unique Farmlands *Guide Sheet* Prime Farmland accounts for 1.1% of land in the study area. There are no farmland protection boards actively conserving land in the watershed.	No Effect Alternative would provide protection of prime farmland through the reduction of streambank erosion, sheet and rill erosion, and sedimentation of streams.	☐		☐		☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often forested or utilized as agricultural, urban, or residential purposes.	May Affect Riparian areas would be enhanced through the installation of natural stream restoration, land treatment programs, and green infrastructure.	☐		☐		☐
Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of the Appalachian Plateau physiographic province and common to the region.	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐		☐		☐

●Wetlands *Guide Sheet* There are 16,312 acres of wetlands within the Coal River Watershed which consists of the following: 44.7 acres of Freshwater Emergent Wetlands; 195.7 acres of Freshwater Forested/Shrub Wetlands; 478.3 acres of Freshwater Pond; 321.9 acres of Lakes; and 15,271.1 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	May Affect Alternative would enhance the values and functions of wetlands and surrounding ecosystems.	☐		☐		☐
●Wild and Scenic Rivers *Guide Sheet* There are no designated Wild and Scenic Rivers in or near the project area.	No Effect	☐		☐		☐
K. Other Agencies and Broad Public Concerns	***Alternative 3***		***Alternative 4***		***Alternative 5***	
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation may also be required.					
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Strategic installation of all previously evaluated alternatives across the watershed will improve the areas overall resilience to flooding and improve quality of life for the ecosystems and the residents.					
L. Mitigation (Record actions to avoid, minimize, and compensate)	Mitigation would likely be required for the length of streams impacted. Vegetation will be established on disturbed areas immediately following construction to a vegetative plan developed conjunction with NRCS and local sponsors.					
M. Preferred Alternative	√ preferred alternative	☐		☐		☐
	Supporting reason	Installation of various flood control and land treatment practices will provide a holistic approach to flood resiliency.				
N. Context (Record context of alternatives analysis)		local				
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.						

O. To the best of my knowledge, the data shown on this form is accurate and complete:

In the case where a non-NRCS person (e.g. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block to verify the information's accuracy.

Signature (TSP if applicable)	Title	Date
HANNAH THACKER Digitally signed by HANNAH THACKER Date: 2024.01.08 13:38:50 -05'00'	Resource Conservationist - Watershed Planner	
Signature (NRCS)	**Title**	**Date**
CHRISTI HICKS Digitally signed by CHRISTI HICKS Date: 2024.01.22 14:11:26 -05'00'	Assistant State Conservationist- Water Resources	

If preferred alternative is not a federal action where NRCS has control or responsibility and this NRCS-CPA-52 is shared with someone other than the client then indicate to whom this is being provided.

The following sections are to be completed by the Responsible Federal Official (RFO)

NRCS is the RFO if the action is subject to NRCS control and responsibility (e.g., actions financed, funded, assisted, conducted, regulated, or approved by NRCS). These actions do not include situations in which NRCS is only providing technical assistance because NRCS cannot control what the client ultimately does with that assistance and situations where NRCS is making a technical determination (such as Farm Bill HEL or wetland determinations) not associated with the planning process.

P. Determination of Significance or Extraordinary Circumstances

To answer the questions below, consider the severity (intensity) of impacts in the contexts identified above. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.

Yes	No	
☐	☑	• Is the preferred alternative expected to cause significant effects on public health or safety?
☐	☑	• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
☐	☑	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?
☐	☑	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?
☐	☑	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?
☐	☑	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?
☑	☐	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.
☐	☑	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?

Q. NEPA Compliance Finding (check one)

The preferred alternative:		Action required
☐	1) is **not a federal action** where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
☐	2) is a federal action **ALL** of which is **categorically excluded** from further environmental analysis **AND** there are **no extraordinary circumstances as identified in Section "P".**	Document in "R.2" below. No additional analysis is required
☐	3) is a federal action that has been **sufficiently analyzed** in an existing Agency state, regional, or national NEPA document **and** there are no predicted significant adverse environmental effects or extraordinary circumstances.	Document in "R.1" below. No additional analysis is required.
☐	4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects **and has been formally adopted by NRCS**. NRCS is required to prepare and publish its own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. **(Note: This box is not applicable to FSA)**	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
☑	5) is a federal action that has **NOT** been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.

R. Rationale Supporting the Finding	
R.1 Findings Documentation	An Environmental Assessment would be prepared for the project if it proceeds to the planning phase. This potential project meets the salutatory acreage, volume/capacity of structure and recreation limit requirements for a PL-566 project. This potential project also meets the requirements of one or more Watershed Operations authorized purposes: Flood Prevention, Watershed Protection, and Agricultural Water Management. It meets the requirement for a minimum of 20% agricultural or rural benefits. It has sponsors who are ready, willing and able to carry out their responsibilities. There are no apparent insurmountable obstacles to this potential project. Section D of this form is not completed because the preferred alternative will not be known until planning is complete.
R.2 Applicable Categorical Exclusion(s) **(more than one may apply)** 7 CFR Part 650 *Compliance With NEPA* , subpart 650.6 *Categorical Exclusions* states prior to determining that a proposed action is categorically excluded under paragraph (d) of this section, the proposed action must meet six sideboard criteria. See NECH 610.116.	

I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy and based on that made the finding indicated above.

S. Signature of Responsible Federal Official:

JEFFREY BARR Digitally signed by JEFFREY BARR
Date: 2024.01.23 11:41:34 -05'00'

Signature	Title	Date

Additional notes

Appendix D.
Forecasted NRCS Staffing Needs

Coal River Staffing Needs

	Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
Phase 1 -Identify Problems, Opportunities, & Concerns						
Final plan of work	30	16	16	16	16	6
Public Participation plan	20	12	12	12	12	2
Gather Data	50	50	50	50	50	20
Consultation List	6				12	2
Final assessment	18	18	18	18	18	6
Total	**124**	**96**	**96**	**96**	**108**	**36**
Phase 2 -Determine Objectives						
Document Sponsor Objectives	6	6	6	6	6	2
Write purpose & Need statement	10	6	6	6	6	4
Agency consultation/coordination	12	12	12	12	12	4
Tribal consultation	20				20	4
Scoping public meeting	12	10	10	10	10	4
Write scope of plan	10	10	10	10	10	8
Total	**70**	**44**	**44**	**44**	**64**	**26**
Phase 3 -Inventory Resources						
Resource Inventories & watershed assessment						
Economic & Social Assessment						
Collect Population Demographics					15	2
Identify effcts to public health & safety					16	2
Identify effcts to homes, businesses & ag operations					80	6
Identify visual concerns					15	2
Collect economic data					40	4
Identify non-NEPA laws related to project	4	4	4	4	6	2
Identify approved regional water resource plans in project	2	2	2	2	2	2
Final economic and social assessment					60	6
Archaeological & Historic Assessment						
Literature review				240		10
Coordination with State Historic Preservation Officer				80		6
Final archaeologcial and historic assessment				350		10
Geologic Assessment & Engineering Assessment						
Review existing geologic investigations		20	20			
Enigneering Surveys		80	80			
Evaluate condition of existing structures		30	30			
Final geologic assessment and engineering assessment		100	100			
Total	**6**	**236**	**236**	**676**	**234**	**52**

Coal River Staffing Needs

	Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
Phase 4 -Analyze Resource Data						
Develop resource existing conditions	20	20	20	20	20	6
Economic & Social Assessment						
Quantify onsite/offsite damages					100	6
Economics and social effects (future without project condition)					40	6
Archaeological & Historic Assessment				16		
Geologic Assessment & Engineering Assessment						
Determine geologic investigation needs		40	40			
Review existing hydrology /hydraulic models		40	40			
Determine watershed conditions (CN, Tc, rainfall)		80	80			
Run preliminary hydraulics		40	40			
Develop hydrologic model for watershed		60	60			
Run hydrologic models		60	60			
Total	**20**	**340**	**340**	**36**	**160**	**18**
Phase 5 -Formulate Alternatives						
Analysis of initial alternatives						
Document alternatives eliminated from detailed study	10	12	12	8	8	10
Document reasonable alternatives	10	12	12	10	10	10
Identify permits, licenses, other entitlements required	4	4	4	4	4	2
Define mitigation strategies	8	6	6	10	10	4
Determine project costs for each alternative		22	22			4
Final plan of work	8	4	4	4	4	2
Final initial alternatives report	50	50	50	50	50	10
Total	**90**	**110**	**110**	**86**	**86**	**42**

Coal River Staffing Needs

Phase 6 -Evaluate Alternatives	**Planner**	**Engineer**	**Engineer**	**Biologist**	**Economist**	**Admin Asst**
Summary & comparison of alternatives	12	12	12	12	12	4
Evaluate environmental resources	30			30		2
Geology		20	20			4
Foundation & slope stability		40	40			8
Sedimentation						
Hydrology & Hydraulics		110	110			20
Run hydrologic models		150	150			20
Breach inundation study		120	120			20
Develop floodplain maps						
Economics						
Determine economic benefits for each alternative					80	10
Trend analysis for alternatives					10	2
Claculate average annual damages					20	2
Calculate benefit cost ratio					6	
Detremine National Economic Efficiency plan					6	
Final summary & comparison of alternative table					180	20
Final environmental consequences narrative	100			100		20
Total	**142**	**452**	**452**	**142**	**314**	**132**

Phase 7 -Make Decisions						
Compare & review alternatives with sponsor	30	10	10	10	10	2
Evaluate environmental resources	440	110	110	110	110	40
Total	**470**	**120**	**120**	**120**	**120**	**42**

Phase 8 -Review & Draft Environmental Document						
Response to agencies and other interseted parties' comments	24	20	20	20	20	4
Repsonse NWMC and SLO review	100	40	40	40	40	10
Repsonse to HQ National Programmatic review	20	10	10	10	10	2
Complete plan	30	30	30	30	30	4
Total	**174**	**100**	**100**	**100**	**100**	**20**

Coal River Staffing Needs,
assuming NRCS will conduct work with own staff

	Planner	Engineer	Engineer	Bilologist	Economist	Admin Asst	
Total Hours	1096	1498	1498	1300	1186	368	
Hourly Rate (includes overhead)	*$120.00*	*$100.00*	*$100.00*	*$100.00*	*$100.00*	*$75.00*	**TOTAL COST**
Total Cost	**$131,520.00**	**$149,800.00**	**$149,800.00**	**$130,000.00**	**$118,600.00**	**$27,600.00**	**$707,320.00**

Appendix E.
Supporting Information Appendix (T&E and Invasive Species)

Endangered species

Listed species and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

Additional information on endangered species data is provided below.

The following species are potentially affected by activities in this location:

THUMBNAILS | LIST

SPECIES GUIDELINES

Mammals

NAME	STATUS
Gray Bat Myotis grisescens Wherever found	Endangered
Indiana Bat CH Myotis sodalis Wherever found	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found	Endangered
Tricolored Bat Perimyotis subflavus Wherever found	Proposed Endangered

Clams

NAME	STATUS

Clubshell Pleurobema clava	Endangered
Fanshell Cyprogenia stegaria Wherever found	Endangered
Northern Riffleshell Epioblasma rangiana Wherever found	Endangered
Pink Mucket (pearlymussel) Lampsilis abrupta Wherever found	Endangered
Round Hickorynut CH Obovaria subrotunda Wherever found	Threatened
Salamander Mussel CH Simpsonaias ambigua Wherever found	Proposed Endangered
Sheepnose Mussel Plethobasus cyphyus Wherever found	Endangered
Snuffbox Mussel Epioblasma triquetra Wherever found	Endangered
Spectaclecase (mussel) Cumberlandia monodonta Wherever found	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found	Candidate

Crustaceans

NAME	STATUS
Guyandotte River Crayfish CH Cambarus veteranus Wherever found	Endangered

Flowering Plants

NAME	STATUS
Northeastern Bulrush Scirpus ancistrochaetus	Endangered
Virginia Spiraea Spiraea virginiana Wherever found	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

RELATED LINKS

Birds of Conservation Concern

Measures for avoiding and minimizing impacts to birds

Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

THUMBNAILS | LIST

PROBABILITY OF PRESENCE SUMMARY

NAME / LEVEL OF CONCERN	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus Non-BCC Vulnerable	Breeds Sep 1 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus BCC Rangewide (CON)	Breeds May 15 to Oct 10

Black-capped Chickadee Poecile atricapillus practicus BCC - BCR	Breeds Apr 10 to Jul 31
Canada Warbler Cardellina canadensis BCC Rangewide (CON)	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea BCC Rangewide (CON)	Breeds Apr 27 to Jul 20
Chimney Swift Chaetura pelagica BCC Rangewide (CON)	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will Antrostomus vociferus BCC Rangewide (CON)	Breeds May 1 to Aug 20
Golden-winged Warbler Vermivora chrysoptera BCC Rangewide (CON)	Breeds May 1 to Jul 20
Kentucky Warbler Oporornis formosus BCC Rangewide (CON)	Breeds Apr 20 to Aug 20
Prairie Warbler Dendroica discolor BCC Rangewide (CON)	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus BCC Rangewide (CON)	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus BCC - BCR	Breeds elsewhere
Wood Thrush Hylocichla mustelina BCC Rangewide (CON)	Breeds May 10 to Aug 31

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

RELATED LINKS

Eagle Management

Measures for avoiding and minimizing impacts to birds

Nationwide conservation measures for birds

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

THUMBNAILS | LIST

PROBABILITY OF PRESENCE SUMMARY

NAME / LEVEL OF CONCERN	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus Non-BCC Vulnerable	Breeds Sep 1 to Aug 31

Listing status

The Endangered Species Act (ESA) and the guidance and policies of the U.S. Fish and Wildlife Service (Service) define many categories of listing statuses for species. As a general rule, IPaC uses the term "listed species" to generically refer to species that may belong to any of the categories.

Endangered (E)

Any species which is in danger of extinction throughout all or a significant portion of its range. Endangered species are protected by the take prohibitions of section 9 under the ESA.

Threatened (T)

Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Threatened species are protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA.

Candidate (C)

Any species for which the Service has sufficient information on its biological status and threats to propose it as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species are not protected by the take prohibitions of section 9 of the ESA.

Proposed endangered (PE)

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, Federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

Proposed threatened (PT)

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, Federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

Similarity of Appearance, Endangered (SAE)

Any species listed as endangered due to similarity of appearance with another species that is listed as endangered. Species listed under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from an endangered species and where the additional threat posed to the endangered species by the similarity of appearance. Species listed under a similarity of appearance may be protected by the take prohibitions of section 9 under the ESA, where they overlap with the listed entity they were listed to protect.

Similarity of Appearance, Threatened (SAT)

Any species listed as threatened due to similarity of appearance with another species that is listed as threatened. Species listed under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from a threatened species and where the additional threat posed to the threatened species by the similarity of appearance. Species listed under a similarity of appearance may be protected by the take prohibitions of section 9 under the ESA, where they overlap with the listed entity they were listed to protect.

Proposed Similarity of Appearance, Endangered (PSAE)

Any species proposed for listing as endangered due to similarity of appearance with another species that is listed as endangered, but a final rule to list has not yet been published. Species proposed for listing under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from an endangered species and where the additional threat

posed to the endangered species by the similarity of appearance. Proposed similarity of appearance are not protected by the take prohibitions of section 9 of the ESA until the rule is finalized.

Proposed Similarity of Appearance, Threatened (PSAT)

Any species proposed for listing as threatened due to similarity of appearance with another species that is listed as threatened, but a final rule to list has not yet been published. Species proposed for listing under a similarity of appearance are not biologically threatened and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from a threatened species and where the additional threat posed to the threatened species by the similarity of appearance. Proposed threatened species are not protected by the take prohibitions of section 9 of the ESA until the rule is finalized.

Emergency listing, Endangered (EmE)

Any species for which the Secretary of the Department of the Interior (Secretary) has determined there is an emergency posing a significant risk to its well-being and has thereby issued an emergency listing as endangered. The emergency listing is temporary for 240 days, during which time the Service evaluates the species under standard listing protocols. Emergency-listed endangered species are afforded all the protections afforded by the ESA.

Emergency listing, Threatened (EmT)

Any species for which the Secretary has determined there is an emergency posing a significant risk to its well-being and has thereby issued an emergency listing as threatened. The emergency listing is temporary for 240 days, during which time the Service evaluates the species under standard listing protocols.

Experimental population, Essential (EXPE)

A population that has been established within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined an essential population is necessary for the continued existence of the species. Essential experimental populations are treated as threatened species and afforded all the protections afforded to threatened species by the ESA.

Experimental population, Non-essential (EXPN)

A population that has been established within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined a non-essential population is not necessary for the continued existence of the species. **For the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))).**

Proposed experimental population, Essential (PEXPE)

A population that has been proposed for establishment within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has proposed an essential population is necessary for the continued existence of the species. Proposed essential experimental populations will be treated as threatened species and afforded all the protections afforded to threatened species by the ESA when finalized. Prior to a final designation under section 10(j) of the ESA, proposed experimental populations do not require consultation under section 7(a)(2) of the ESA and are not protected by the take prohibitions of section 9. Federal agencies must confer with the Service for any actions that may jeopardize the continued existence of proposed species.

Proposed experimental population, Non-essential (PEXPN)

A population that has been proposed for establishment within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined a non-essential population is not necessary for the continued existence of the species. Once finalized, for the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))). Federal agencies must confer with the Service for any actions that may jeopardize the continued existence of proposed species.

Birds of Conservation Concern (BBC)
Bird Conservation Region (BBR)
Continental (jnited States and Alaska (CON)

(jSFWS Information for Planning and Consultation tool (IPac)
(https://ipac.ecosphere.fws.gov/status/list)

Federally Threatened and Endangered Species in West Virginia

Federally Endangered Species		Critical Habitat	Year Listed
Indiana bat	*Myotis sodalis*	Y	1967
gray bat (accidental)	*Myotis grisescens*		1976
Pink mucket pearlymussel	*Lampsilis abrupta*		1976
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	Y	1979
running buffalo clover *	*Trifolium stoloniferum*		1987
harperella	*Ptilimnium nodosum*		1988
shale barren rockcress	*Arabis serotina*		1989
fanshell	*Cyprogenia stegaria*		1990
purple cat's paw pearlymussel	*Epioblasma obliquata obliquata*		1990
northeastern bulrush *	*Scirpus ancistrochaetus*		1991
northern rifffleshell	*Epioblasma torulosa rangiana*		1993
clubshell	*Pleurobema clava*		1993
James spinymussel	*Pleurobema collina*		1998
snuffbox	*Epioblasma triquetra*		2012
rayed bean	*Villosa fabalis*		2012
spectaclecase	*Cumberlandia monodonta*		2012
sheepnose	*Plethobasus cyphyus*		2012
Diamond Darter	*Crystallaria cincotta*	Y	2013
Guyandotte River crayfish	*Cambarus veteranus*	proposed	2016
rusty patched bumble bee	*Bombus affinis*		2017
Candy Darter	*Etheostoma osburni*	proposed	2018
tubercled-blossom pearly mussel	*Epioblasma torulosa torulosa*	extirpated	

Federally Threatened Species		Critical Habitat	4(d) rule	Year Listed
flat-spired three-toothed land snail	*Triodopsis platysayoides*			1978
Madison Cave isopod	*Antrolana lira*	Y		1982
small whorled pogonia	*Isotria medeoloides*			1982
Cheat Mountain salamander	*Plethodon nettingi*			1989
Virginia spiraea	*Spiraea virginiana*			1990
northern long-eared bat	*Myotis septentrionalis*		Y	2015
Big Sandy crayfish	*Cambarus callainus*	proposed		2016
eastern black rail (accidental)	*Laterallus jamaicensis jamaicensis*		Y	2020

Species Propopsed for Listing		Critical Habitat	Status	Year Listed
round hickorynut	*Obovaria subrotunda*	Y	Thr.	2020
longsolid	*Fusconaia subrotunda*	Y	Thr.	2020

* Proposed for delisting

Revised: 30 September 2020

Invasive species examples:

Garlic mustard

• **Garlic mustard, Japanese honeysuckle** and **kudzu**- invaders of moist forest edges, even those without disturbance.

• **Purple loosestrife-** an incredibly invasive exotic now blanketing emergent wetlands along the Ohio River, and increasing along other major rivers throughout the state. In some cases it replaces native vegetation, threatens rare plant species, and destroys small wetlands.

• **Mile-a-minute**- a spiny vine found climbing 10-20 feet into trees, often smothering native shrubs and shading out herbaceous plants along the Ohio River and rivers in the Eastern Panhandle.

Spotted knapweed

• **Japanese knotweed and sachaline knotweed**- two stout, perennial clonal herbs that can out-compete all other vegetation in certain areas.

•**Spotted knapweed, barren brome and tree of heaven-** invaders of shale barrens, limestone glades and barrens, and native grassland communities.

What can you do?

• Become aware of the differences between native and non-native plants and the potential for invasive species to damage native ecosystems. The following items are available from the WVDNR:

❖*Checklist of the Vascular Flora of West Virginia,* a checklist of the native and naturalized vascular plants of the state.

❖*Native Shrubs in Wildlife Landscaping*, a series of information sheets about the use of 50 native shrubs in wildlife planting, produced by the West Virginia Native Plant Society and the West Virginia Wildlife Diversity program.

❖A list of companies within the mid-Atlantic region from which alternative native stock can be purchased.

• Evaluate in advance the wisdom of introducing non-native plants into our state.

• Minimize habitat disturbance in natural areas, reducing the chance for invasion by non-native aggressive plants.

• In extreme cases, consider the eradication of highly problematic non-native invasive plant species, but carefully consider the potential consequences on the entire ecosystem and the likelihood of success. In less severe cases, try to minimize the impact of the invasive plant on the natural area.

• Help educate individuals of the seriousness of the problem and explore the use of native plant species in the management of public lands.

• If you find an unfamiliar plant and it appears to be spreading, have it identified by your local extension agent. If it is a potential invader, members of the WV Invasive Species Working Group will conduct an assessment and make recommendations.

Who is helping?

• The ***West Virginia Invasive Species Working Group***, an inclusive statewide group whose mission is to facilitate communication and collaboration for the prevention or reduction of the negative impacts of invasive species.

• The ***West Virginia Native Plant Society*** encourages nurserymen to cultivate plants native to West Virginia that could be used in conservation and ornamental projects throughout the state as alternatives to non-native invasive plant species.

• The ***West Virginia Garden Club, Inc.,*** the West Virginia Native Plant Society and the WV Division of Natural Resources jointly produced this brochure.

• The ***West Virginia Native Plant Society*** and the ***West Virginia Natural Heritage Program*** have developed informative presentations about invasive plants. Please contact the DNR Elkins office *(below)* to arrange a presentation.

• Several organizations sponsor workshops on identifying problematic plant species.

West Virginia Division of Natural Resources
in cooperation with:
West Virginia Garden Clubs, Inc.
West Virginia Native Plant Society

Cover photos: Background image of Japanese knotweed by Jil M. Swearinger, USDI National Park Service, www.forestryimages.org and Purple loosestrife (inset) by Linda Haugen, USDA Forest Service, www.forestryimages.org

Wildlife Diversity Program

Wildlife Resources
West Virginia Division of Natural Resources

P.O. Box 67
Elkins, WV 26241
(304) 637-0245
Fax: (304) 637-0250

10M 4/06

WVDNR WILDLIFE RESOURCES SECTION

Invasive Plants of West Virginia

www.wvdnr.gov

Kudzu

What are non-native invasive plants?

People have been moving Earth's plants from place to place for centuries. Many of the exotic plants we have introduced to our landscape by intention or accident have been beneficial to us and have had no unfortunate ecological impacts on natural communities. But a small percentage have spread from where they first became established, and have become serious threats to wetlands, shale barrens, prairies, glades and other rare ecosystems.

Invasive plants often get started in areas disturbed by such human activities as road and trail building, timbering, mining, and other activities that remove native vegetation, disturb the soil, or dramatically change the amount of sunlight or moisture that reaches the land. From such situations, a relatively small number of invasive species have moved into natural areas. These species have reproduced rapidly, forming stands that exclude nearly all other plant species. In the worst cases, they radically altered ecosystem processes and natural areas, and displaced native species.

Concerned citizens have long been sounding alarms about the effects of pollution and misuse of land on our native plant and animal communities.

Stilt grass overtaking an interior mud-flat wetland at Ohio River Island.

Recently, increasing concern has been expressed that non-native plant species are invading and changing natural areas. These aggressive "weeds" are non-native invasive plants, sometimes referred to as exotic pest plants.

How do they differ from native species?

Generally, the native plant species of West Virginia are those that were part of plant communities when North America was first settled by Europeans. Change in plant communities is a natural part of life. As Dr. John Randall (The Nature Conservancy) and Janet Marinelli (Brooklyn Botanic Garden), point out in their handbook, *Invasive Plants: Weeds of the Global Garden*:

"New species move in as the climate changes and as soils build up and become richer, or erode and become less fertile.

In the normal course of events, the arrival of new species may be the result of a single catastrophic event like a hurricane, or of gradual change over thousands of years. Humans have vastly accelerated the movement of plants, carrying thousands of species that could not have crossed natural barriers like oceans, mountain ranges and deserts, to new areas.

Mile-a-minute

Species that have flourished and spread on their own, only after people transported them across barriers they could not otherwise surmount, are considered non-natives. In many areas these plants have overwhelmed the native plants and animals."

We value Natural Areas!

Natural areas are generally areas of limited development where naturally occurring, functioning ecosystems are supporting the greatest amount of natural biological diversity the nonliving resources (soil, sunlight, minerals, etc.) of that area can support.

- Healthy natural areas have seemingly endless interrelationships among the living and non-living parts of their ecosystems. Life thrives in such areas!
- Natural areas often support rare, threatened and endangered species of plants, animals, and fungi. The natural communities themselves are often rare enough or of such quality that society recognizes the value of conserving them.

Loosestrife infestation.

- Natural areas are valuable parts of the global landscape from which future generations can continue to learn about ecological processes. Areas such as Cranberry Glades, Cranesville Swamp, shale barrens, limestone glades and riverine marshes are a few West Virginia examples.

Non-native invasive plant species, in numerous examples around the world, have reduced available habitat for native species and/or eliminated associated native species altogether. This process has the potential to significantly reduce natural biological diversity.

What challenges are there in controlling invasive plants?

The number of non-native invasive plant species in West Virginia is rising

Approximately 600 species, nearly 25% of vascular plants found in West Virginia outside of cultivation, are non-native. Each year, ecologists become more aware of the number of invasive plant species within the state and the threats they pose to natural communities.

Joe-Pye weed, a valuable native

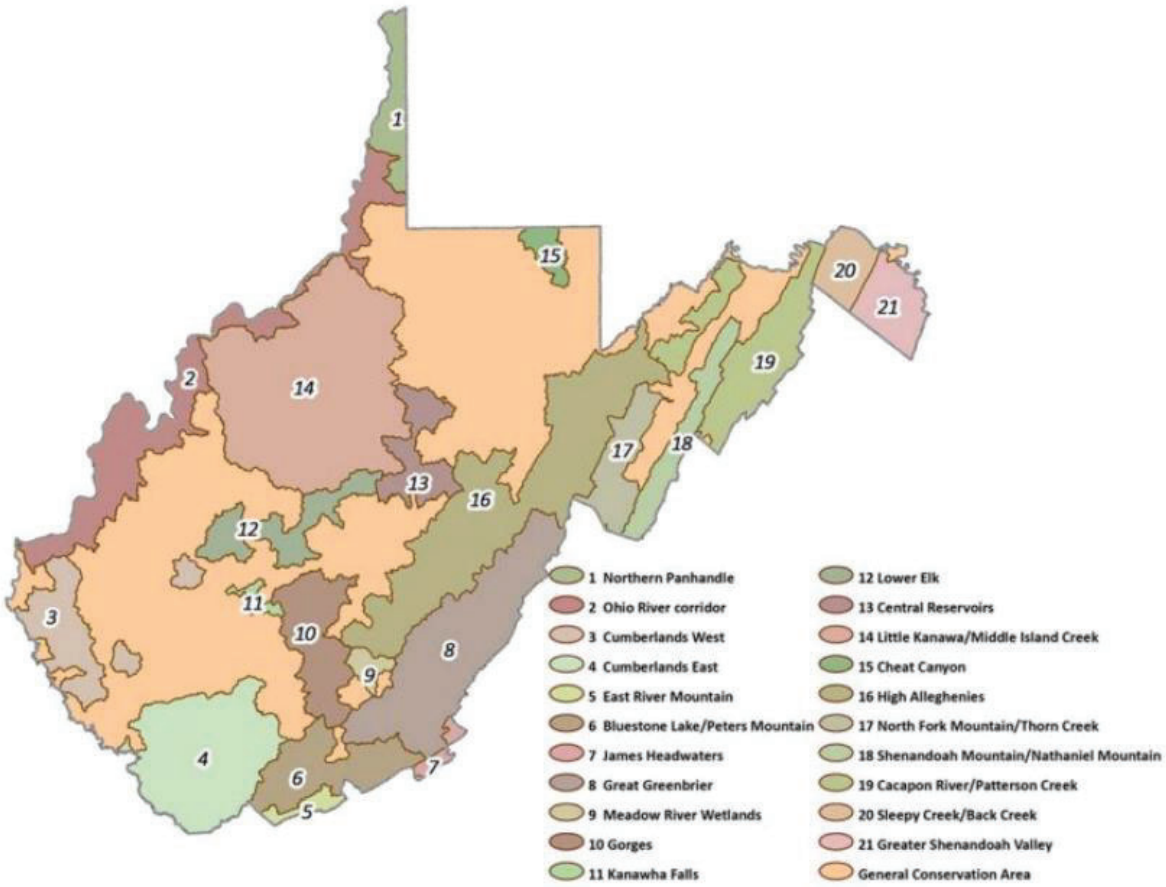
Native stock plants are available

Many agencies and private landowners are using native alternatives for conservation purposes, and many West Virginia nurseries sell varieties derived from local communities to be sold as alternatives to exotic species.

InvasivePlants.indd (wvdnr.gov)

listed species cheat sheet.xlsx (wvdnr.gov)

WVDNR Conservation Focus Areas



[WV DNR Conservation Focus Areas]

Species of Greatest Conservation Need Found in Coal River Watershed				
Common Name	**Scientific Name**	**Species Group (Broad)**	**Global Rank**	**State Rank**
Green Salamander	Aneides aeneus	Vertebrates	G3G4	S3
Bald Eagle	Haliaeetus leucocephalus	Vertebrates	G5	S3B,S3N
Silver-haired Bat	Lasionycteris noctivagans	Vertebrates	G3G4	S2
Eastern Red Bat	Lasiurus borealis	Vertebrates	G3G4	S3
Northern Myotis	Myotis septentrionalis	Vertebrates	G2G3	S1
Indiana Myotis	Myotis sodalis	Vertebrates	G2	S1
Allegheny Woodrat	Neotoma magister	Vertebrates	G3G4	S3
Redside Dace	Clinostomus elongatus	Vertebrates	G3G4	S1
Diamond Darter	Crystallaria cincotta	Vertebrates	G1	S1
Tippecanoe Darter	Etheostoma tippecanoe	Vertebrates	G3G4	S2
Ohio Lamprey	Ichthyomyzon bdellium	Vertebrates	G3G4	S2
Northern Madtom	Noturus stigmosus	Vertebrates	G3	S1
Longhead Darter	Percina macrocephala	Vertebrates	G3	S2
Pink Mucket	Lampsilis abrupta	Mussels, Snails, & Other Molluscs	G1G2	S1
Spectaclecase	Margaritifera monodonta	Mussels, Snails, & Other Molluscs	G3	S1
Appalachia Bellytooth	Gastrodonta fonticula	Mussels, Snails, & Other Molluscs	G3G4	S2
Round Supercoil	Paravitrea reesei	Mussels, Snails, & Other Molluscs	G3	S2
Carter Threetooth	Triodopsis anteridon	Mussels, Snails, & Other Molluscs	G3	S3
Buttressed Threetooth	Triodopsis rugosa	Mussels, Snails, & Other Molluscs	G1	S1
Guyandotte River Crayfish	Cambarus veteranus	Crayfish, Shrimp, & Other Crustaceans	G1	S1
American Bumble Bee	Bombus pensylvanicus	Insects - Bees	G3G4	S2
Diana Fritillary	Argynnis diana	Insects - Butterflies and Moths	G2G3	S2
Early Hairstreak	Erora laeta	Insects - Butterflies and Moths	G2G3	S2
Monongahela Snowfly	Allocapnia frumi	Insects - Caddisflies, Mayflies, and Stoneflies	G2G3	S2
Aracoma Sallfly	Alloperla aracoma	Insects - Caddisflies, Mayflies, and Stoneflies	G3	S1
Blue Ridge Sedge	Carex lucorum var. austrolucorum	Vascular Plants - Flowering Plants	G5T3T4	S1
Appalachian Dragonhead Pogonia	Cleistesiopsis bifaria	Vascular Plants - Flowering Plants	G3G4	S1
Dwarf Anemone	Anemone quinquefolia var. minima	Vascular Plants - Flowering Plants	G5T3	S2
American Alumroot	Heuchera americana var. hispida	Vascular Plants - Flowering Plants	G5T3?	S2
Butternut	Juglans cinerea	Vascular Plants - Flowering Plants	G3	S2

Sweet Pinesap	Monotropsis odorata	Vascular Plants - Flowering Plants	G3	S1
Virginia Mallow	Ripariosida hermaphrodita	Vascular Plants - Flowering Plants	G3	S3
Virginia Spiraea	Spiraea virginiana	Vascular Plants - Flowering Plants	G2?	S1

Definitions for interpreting NatureServe's global (range-wide) conservation status ranks can be found at the following: Statuses | NatureServe Explorer

Nonindigenous Aquatic Species

Specimen ID	Date	Species	New Area
1654649	11/16/2020	floating primrose-willow Ludwigia peploides	County: Ritchie (WV) Drainage: Little Kanawha (05030203)
279189	9/22/2011	pirapitinga, red-bellied pacu Piaractus brachypomus	State: WV County: Putnam (WV) Drainage: Lower Kanawha (05050008)
1680066	11/30/2021	wandering hydrilla Hydrilla verticillata [monoecious]	County: Raleigh (WV) Drainage: Lower New (05050004)
1654634	11/16/2020	parrot feather Myriophyllum aquaticum	County: Lincoln (WV) Drainage: Lower Guyandotte (05070102)
279189	9/22/2011	pirapitinga, red-bellied pacu Piaractus brachypomus	State: WV County: Putnam (WV) Drainage: Lower Kanawha (05050008)

Data taken from USGS NAS Alert System on a county level.
https://nas.er.usgs.gov/AlertSystem/default.aspx

Invasive Species

Animals:

Common Name	Scientific Name
pig (feral), wild boar at large	Sus scrofa (feral type)

Diseases:

Common Name	Scientific Name
rose rosette disease (RRD)	Emaravirus RRD
oak wilt	Bretziella fagacearum
butternut canker	Ophiognomonia clavigignenti-juglandacearum
dogwood anthracnose	Discula destructiva

Insects:

Common Name	Scientific Name
emerald ash borer	Agrilus planipennis
southern pine beetle	Dendroctonus frontalis
hemlock woolly adelgid	Adelges tsugae
brown marmorated stink bug	Halyomorpha halys

Plants:

Common Name	Scientific Name
autumn olive	Elaeagnus umbellata
European privet	Ligustrum vulgare
cutleaf teasel	Dipsacus laciniatus
Japanese honeysuckle	Lonicera japonica
kudzu	Pueraria montana var. lobata
multiflora rose	Rosa multiflora
princesstree	Paulownia tomentosa
sericea lespedeza	Lespedeza cuneata
Japanese stiltgrass	Microstegium vimineum
tall fescue	Festuca arundinacea
tree-of-heaven	Ailanthus altissima
mimosa	Albizia julibrissin
Japanese hop	Humulus japonicus
Japanese knotweed	Reynoutria japonica
Canada thistle	Cirsium arvense
poison hemlock	Conium maculatum
common teasel	Dipsacus fullonum
ground ivy	Glechoma hederacea
johnsongrass	Sorghum halepense
common mullein	Verbascum thapsus
English ivy	Hedera helix
yellow rocket	Barbarea vulgaris
Chinese silvergrass	Miscanthus sinensis
Morrow's honeysuckle	Lonicera morrowii
common velvetgrass	Holcus lanatus
small carpetgrass, joint-head grass	Arthraxon hispidus
Queen Anne's lace, wild carrot	Daucus carota
dodder	Cuscuta
garlic mustard	Alliaria petiolata
round leaf bittersweet	Celastrus orbiculatus
wine raspberry	Rubus phoenicolasius
red clover	Trifolium pratense
purple crown-vetch	Securigera varia
tawny daylily	Hemerocallis fulva
creeping yellow loosestrife, creeping Jenny	Lysimachia nummularia
mugwort	Artemisia vulgaris

Data taken from EDDMaps status of invasive species report on a county level. (www.eddmaps.org/)

Essential Fish Habitat

None for WV

Data taken from National Oceanic and Atmospheric Administration (NOAA).

(https://habitat.noaa.gov/appa/efhmapper/?page=page_3