

BIODIVERSITY

IN WEST VIRGINIA FIBER SOURCING

The WV State Implementation Committee (SIC) of the Sustainable Forestry Initiative (SFI) provides resources to member companies, contractors, landowners, and other interested parties to meet the SFI 2022 Fiber Sourcing Standard's Objective 1 on Biodiversity in Fiber Sourcing.

Consulting with the WVDNR, the state's forests were categorized into eight types and critically imperiled (G1) and imperiled (G2) species and communities potentially present in each were identified. The WVDNR then developed conservation recommendations.

WHAT ARE G1 AND G2 SPECIES AND COMMUNITIES?

G1 - Critically Imperiled — At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.

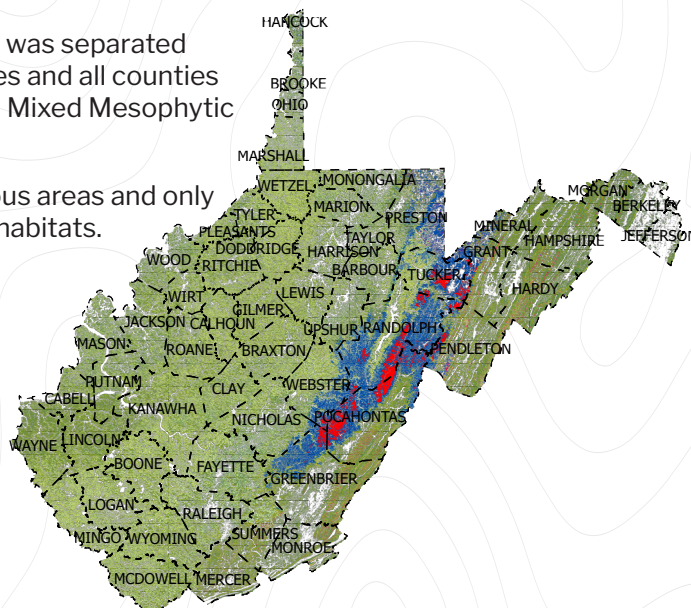
G2 - Imperiled — At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

WV FOREST TYPES

The WV DNR's West Virginia State Wildlife Action Plan, the state was separated into 8 different forest types. Nine Counties have all 8 habitat types and all counties have the most common types - Dry Oak Pine, Dry Mesic Oak, and Mixed Mesophytic (less Morgan County).

Some forest types are specific to higher elevations or mountainous areas and only 20 Counties have one or more of the three least common forest habitats.

Dry-Mesic Oak Forests	30.5%
Mixed Mesophytic Forests	18.2%
Dry Oak (-Pine) Forests	15.2%
Northern Hardwood Forests	6.1%
Red Spruce Forests	1.1%
Pine-Oak Rocky Woodlands	0.5%
Dry Calcareous Forests, Woodlands, and Glades ...	0.4%
Montane Red Oak Forests	0.1%



HOW TO INCORPORATE G1 & G2 CONSERVATION INTO FOREST MANAGEMENT ACTIVITIES

- Always, appropriately implement the “WV Silvicultural Best Management Practices for Controlling Soil Erosion and Sedimentation from Logging Operations”. **Available at <https://wvforestry.com>**
- Visit the online mapping tool **<https://wvfa.org/g1-g2-species/>** to identify forest types in a county of interest.
- Individual detailed county maps show the location of the different forest types as defined by the WVDNR.
- The WVDNR has prepared reports for each forest type that includes a description of the forest type and the detailed list of G1 and G2 species and habitats that could be found in those forests.
- Where there are known or suspected G1 or G2 presence, appropriately implement the “General Conservation Recommendations” listed on page 2 of this document and/or “Special Recommendations” on page 3.

REVIEW THE FULL REFERENCE REPORT

“Forest-associated G1 and G2 Rank Species of Greatest Conservation Need” at the following link:
<https://www.wvfa.org/g1-g2-species>

GENERAL CONSERVATION RECOMMENDATIONS

BMP's

Appropriately implement the “WV Silvicultural Best Management Practices for Controlling Soil Erosion and Sedimentation from Logging Operations”

WATER

Wetlands and Floodplains are particularly sensitive to changes in hydrology and water quality. No flows should be diverted into or withdrawn from the water sources to these communities, and discharges of pollutants, nutrients, or sediment should not be allowed into their water sources.

If water crossings are necessary:

- Use alternative routes to avoid crossing if possible
- Minimize the number of crossings
- Use established fords when possible
- Utilize timber mats and bank protection
- Leave riparian trees and vegetation intact as much as possible

PLANTS

Retain natural plant community

- Clear equipment/vehicles of mud/soil/seeds from other locations before bringing to site
- Remove invasive plants, such as autumn olive, bush honeysuckle, J. stilt grass, barberry, and multiflora rose
- Replant sites with native plants recommended by the West Virginia Planting Tool
<https://tagis.dep.wv.gov/seeds/>
- Emphasis on wildflower species on log landings, road edges, and clearcuts

Implement road dust control on gravel or dirt roads

Reduce changes in microclimate

- Employ uneven aged timber management when possible, and shelterwood cut/leave standing trees when uneven aged management is not possible
- Leave woody debris on ground, including logs when possible
- Leave 150 ft buffer around rock outcroppings and boulder piles

Non-native invasive species should be controlled in areas disturbed by the project and should be monitored (and carefully controlled) in the adjacent rare community occurrences following the project.

BATS

Apply Beneficial Forest Management Practices for White Nose Syndrome affected bats

https://efotg.sc.egov.usda.gov/references/public/MN/Forestry_bmps_Bats_may31-2018.pdf

Reduce impacts on caves

- Don't dispose of waste, including trash, slash, and rubble, in sinkholes/karst
- Don't direct water into sinkholes/karst
- 300 ft reduced ground disturbance buffer around karst features such as a cave entrance
- 100 ft wide reduced ground disturbance buffer for corridors upstream to karst features
- 100 ft wide reduced ground disturbance buffer to the edge of losing streams
- For sinkholes, the reduced ground disturbance buffer shall extend in all directions to a distance of 100' or to the sinkhole catchment boundary, whichever is less.
- Restrict hazardous materials storage, equipment refueling, or parking within 100 feet of karst terrain features.
- Recommendation of conducting pre- and post-construction tests of water quality and quantity for hydrologically active cave systems within 150 ft of the harvestable area.

SPECIES WITH SPECIAL RECOMMENDATIONS

Greenbrier Tigersnail | *Anguispira stihleri*

- Greenbrier County - limestone outcroppings/bluffs
- Minimize disturbance within the total buffer zone of 150ft.
- Primary buffer of 100ft - no disturbance around rock features
- Secondary buffer of 50ft - up to 20% (based on basal area) of harvestable timber may be removed. Skid roads may be constructed
- Exception: If tributary glades along the Greenbrier River have species present, increase Primary buffer to 150 ft, with same 50 ft secondary buffer

Mesomphix luisant

- Greenbrier and Logan Counties.
- Same conservation recommendation as Greenbrier Tigersnail

Helicodiscus villosus

- Greenbrier County - Talus slopes and springs
- Same conservation recommendation as Greenbrier Tigersnail



A



B



C

A: Greenbrier Tigersnail | *Anguispira stihleri* B: *Mesomphix luisant* C: *Helicodiscus villosus* Photo Credits: <https://smasheasy.com/mollusks/>

Greenbrier crayfish | *Cambarus smilax*

- Greenbrier River basin - mid to headwater reaches
- Riparian buffers of 100 ft on both sides of the stream to be preserved or restored, with wider buffers recommended on steep slopes.



<https://digitalmedia.fws.gov/digital/collection/natdiglib/id/26209/rec/1>

Greenbrier cave crayfish | *Cambarus nerterius*

Typically inhabits caves that are hydrologically connected to surface water and runoff conditions. In consideration of this:

- 300 ft reduced ground disturbance buffer around karst features
- 100 ft reduced ground disturbance buffer for corridors upstream to karst features
- 100 ft reduced ground disturbance buffer to the edge of losing streams
- Sinkholes - buffer shall extend in all directions to a distance of 100' or to the sinkhole catchment boundary, whichever is less.
- Restrict hazardous materials storage, equipment refueling, or parking within 100 feet of karst terrain features.
- Recommendation of conducting pre- and post-construction tests of water quality and quantity for hydrologically active cave systems within 150 ft of the harvestable area.
- See pages 48-51 and page 104 of Guidelines for Cave & Karst Protection regarding forestry practices and the need or buffers on forested karst landscapes.



<https://digitalmedia.fws.gov/digital/api/singleitem/image/natdiglib/17494/default.jpg?highlightTerms=Greenbrier%20Cave%20crayfish>

Appalachian Grizzled Skipper | *Pyrgus wyandot*

As a species in extremely steep decline, habitat conservation consideration should be given regardless if occupancy is known.

- When occupancy is unknown, limited or no use of herbicide treatments in or near open to semi- open shale slopes and barrens that have the food host plant *Potentilla canadensis*.
- When occupancy is known, dust-suppression measures implemented for skid and existing dirt and gravel roads adjacent to open to semi-open shale slopes and barrens.
- Within a harvestable area that has 1) open to semi-open shale slopes and barrens, and 2) also have the food host plant *Potentilla canadensis*, consider setting aside up to 2km of suitable habitat within a known project area (or max of project area if < 2km) that has reduced ground disturbance activities within a 300 ft buffer of the suitable habitat.



<https://www.marylandbiodiversity.com/view/597>

Splendid Stonefly | *Hansonoperla hokolesqua*

- Nicholas, Greenbrier, and Wayne counties within the Gauley and Twelvepole Small, intermittent streams with stone substrates within harvestable areas
- Follow WVDOF Logging Sediment Control Act guidelines: a minimum stream management zone (SMZ) width or distance between exposed or disturbed soil and an intermittent stream should be no less than 100 feet slope distance on either side of the stream from the top or edge of the channel.



ADDITIONAL WEB RESOURCES

WV Division of Forestry
WV Department of Natural Resources
WV Planting Tool

<https://wvforestry.com>
<https://wvdnr.gov>
<https://tagis.dep.wv.gov/seeds>

Sustainable Forestry Initiative
WV SFI State Implementation Committee
WV Forestry Association

<https://forests.org>
<https://www.wvfa.org/sfi>
<https://wvfa.org>

NatureServe

<https://explorer.natureserve.org>

WHO ARE THESE ORGANIZATIONS?

SFI

The Sustainable Forestry Initiative (SFI) is an independent, non-profit organization that sets standards and provides certification for responsible forest management across North America. It functions as a comprehensive program that promotes sustainable forestry practices through guidelines focused on environmental protection, wildlife conservation, and perpetual harvesting of forest resources for timber and other products.

NatureServe

NatureServe is a non-profit organization that functions as an authoritative source and comprehensive database on the distribution, abundance, and conservation status of plants, animals, and ecosystems across the Americas. Their goal is to transform complex scientific data into practical information and tools that can guide conservation efforts and land management decisions by public and private sectors.

