

West Virginia State Wildlife Action Plan



2015 West Virginia State Wildlife Action Plan

West Virginia Division of Natural Resources

September 1, 2015



West Virginia State Wildlife Action Plan

- 2001: Congress established State Wildlife Grants (funding of non-game programs).
- Requires states to develop State Wildlife Action Plans
- *2005 WV SWAP (emphasized Monitoring)*
- *2015 WV SWAP (emphasized Conservation Actions)*
- *2025 WV SWAP (will emphasize Climate Resilience)*

West Virginia State Wildlife Action Plan

10 Year Goals of Plan

- Halt the Decline of At-Risk Species
- Avoid the Need for Federal Listing
- Recover Currently Listed Species and Allow for Delisting
- Keep Secure Species Secure
- Conserve the Full Array of Habitat Types and Biological Diversity in WV

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Landowners are not mandated to participate by State and Federal Law

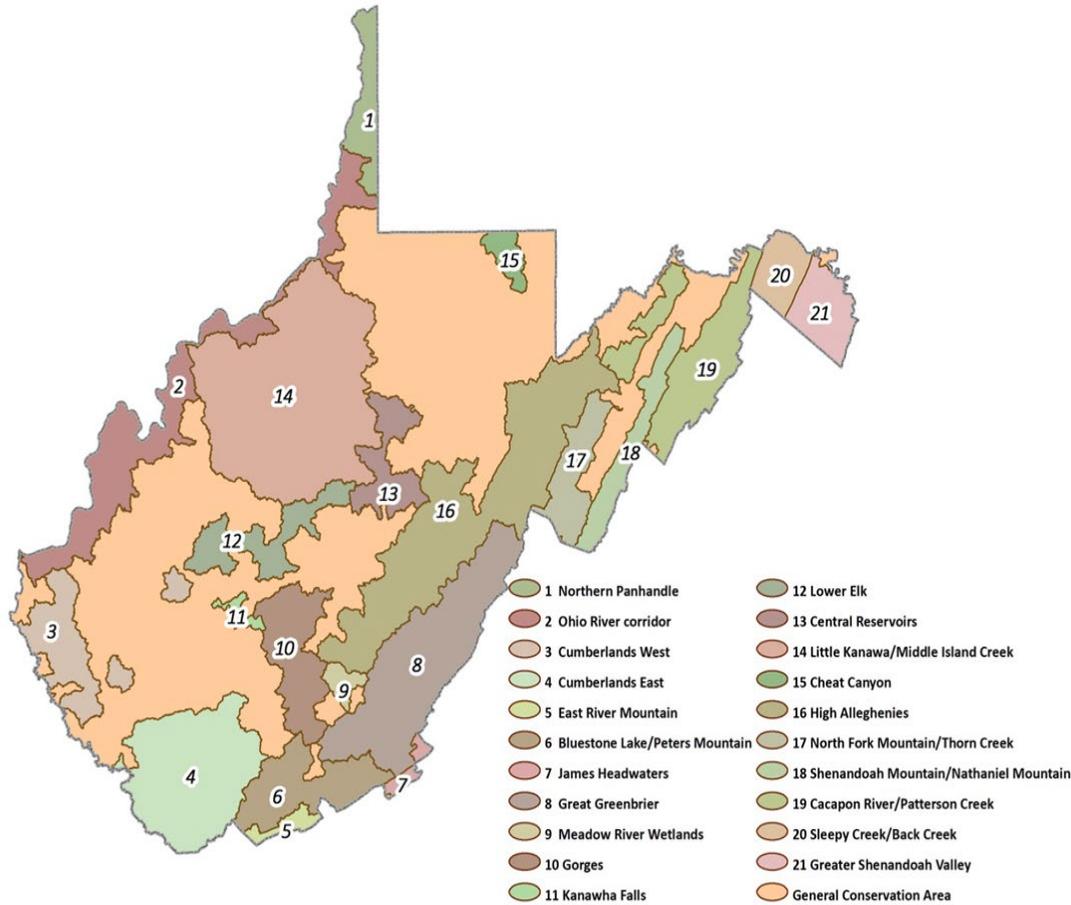


These are only management recommendations – with a common goal to protect and enhance:

- Species of Greatest Conservation Need
- Wildlife Habitat

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Conservation Focus Areas

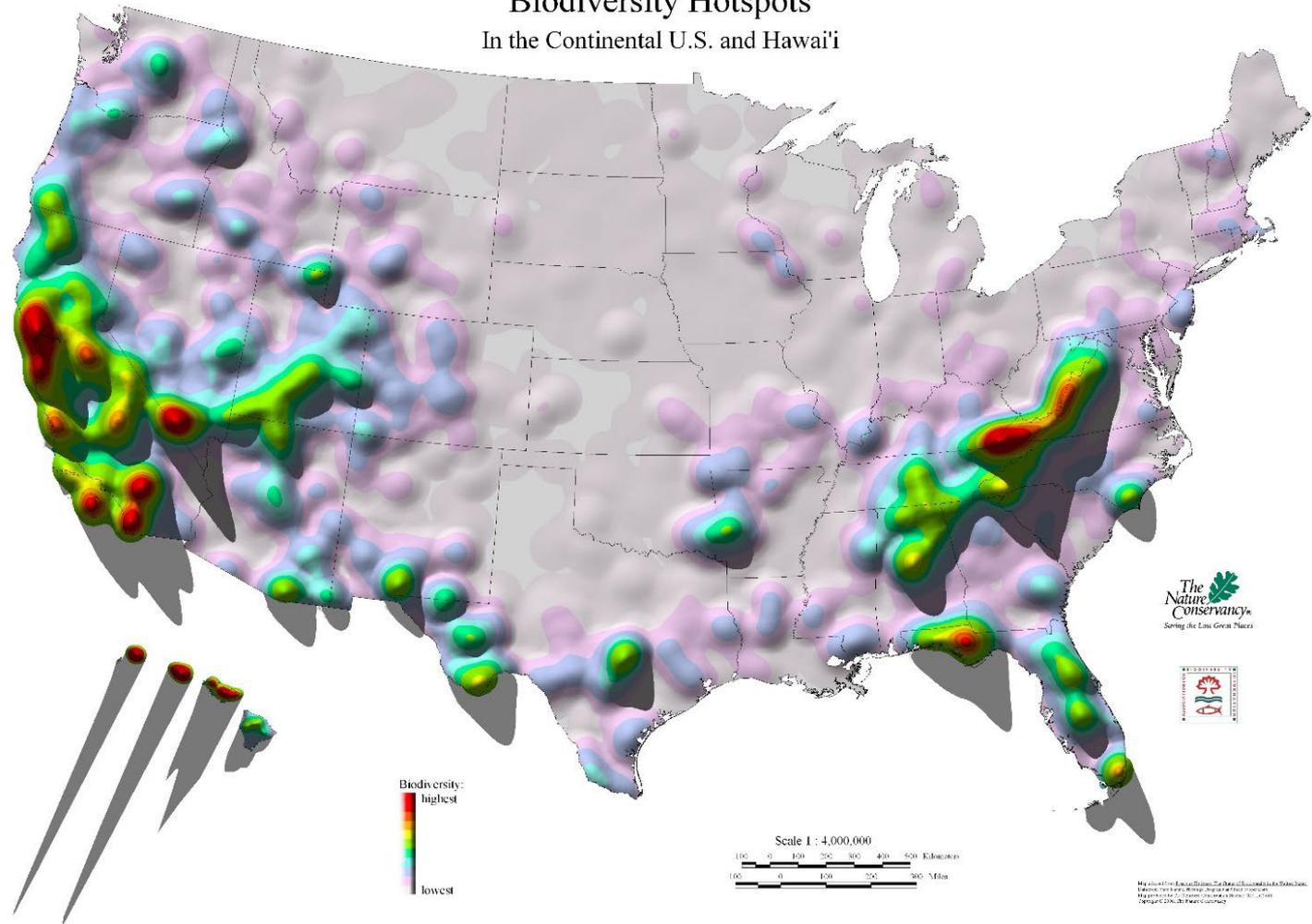


- Geographies where resources can be applied more effectively and efficiently
- Provide opportunities for leveraging successful outcomes
- Scale where intensive collaboration can occur



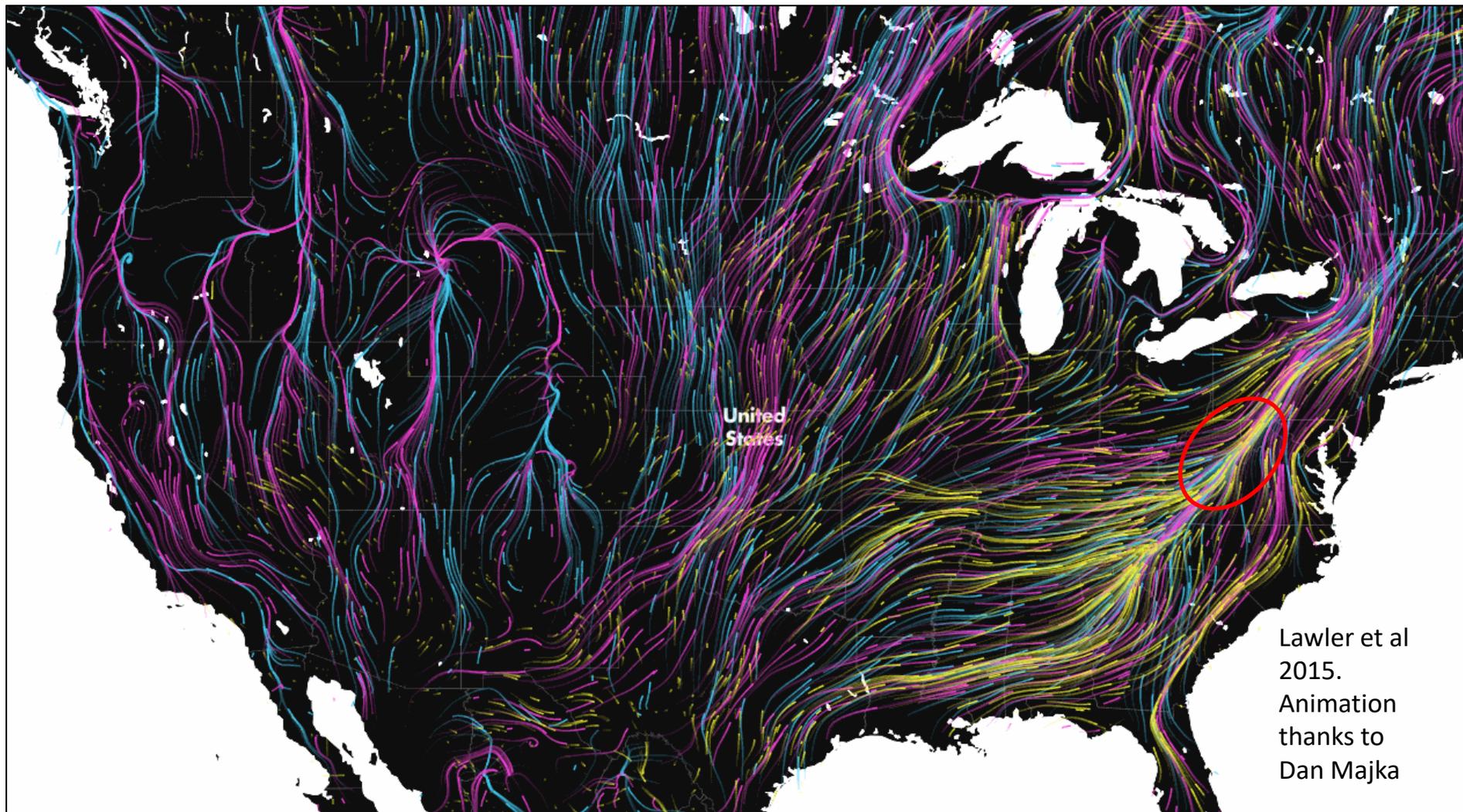
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Biodiversity Hotspots
In the Continental U.S. and Hawai'i

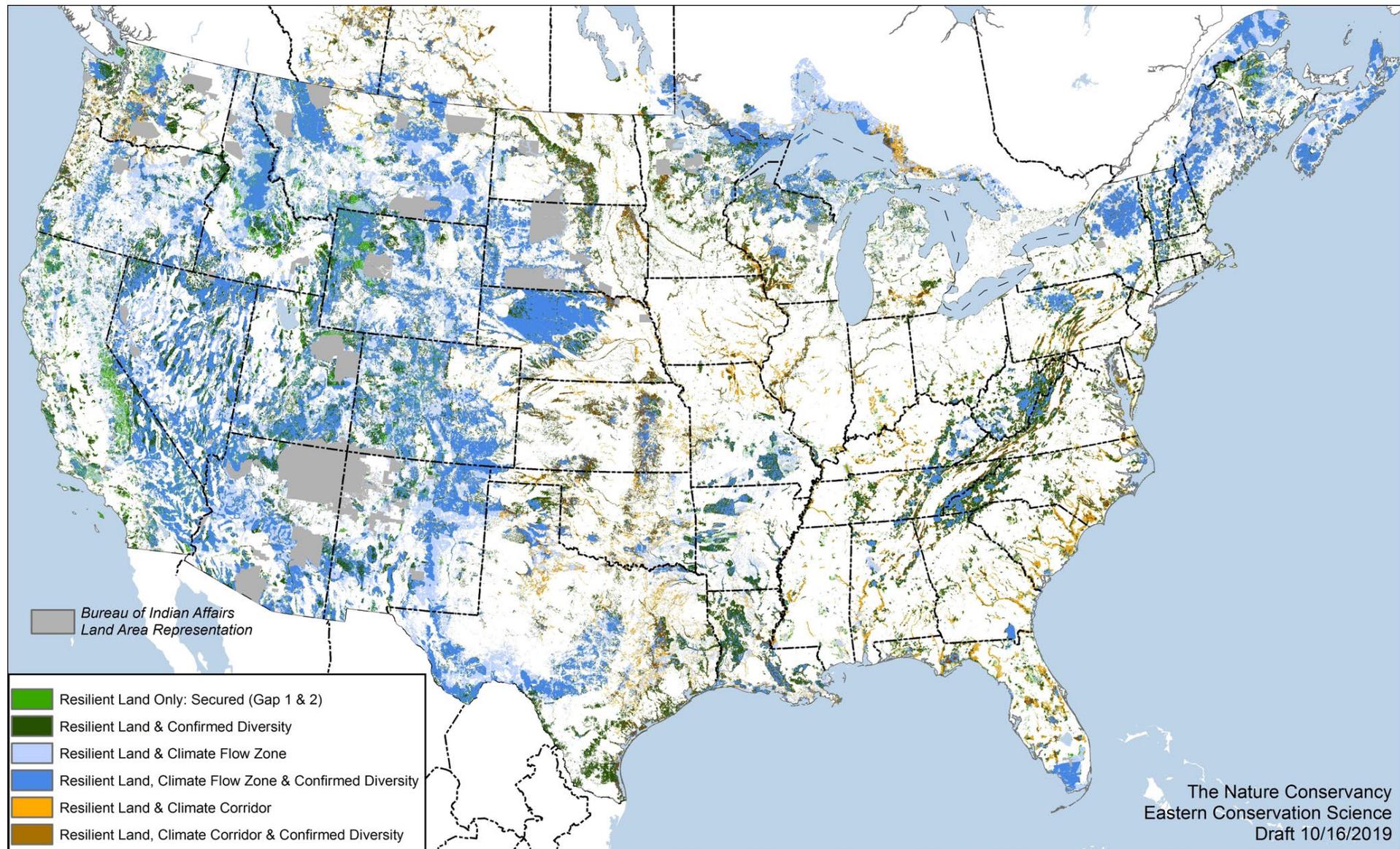


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The gradual movement of species in different taxa across the landscape in response to climate change



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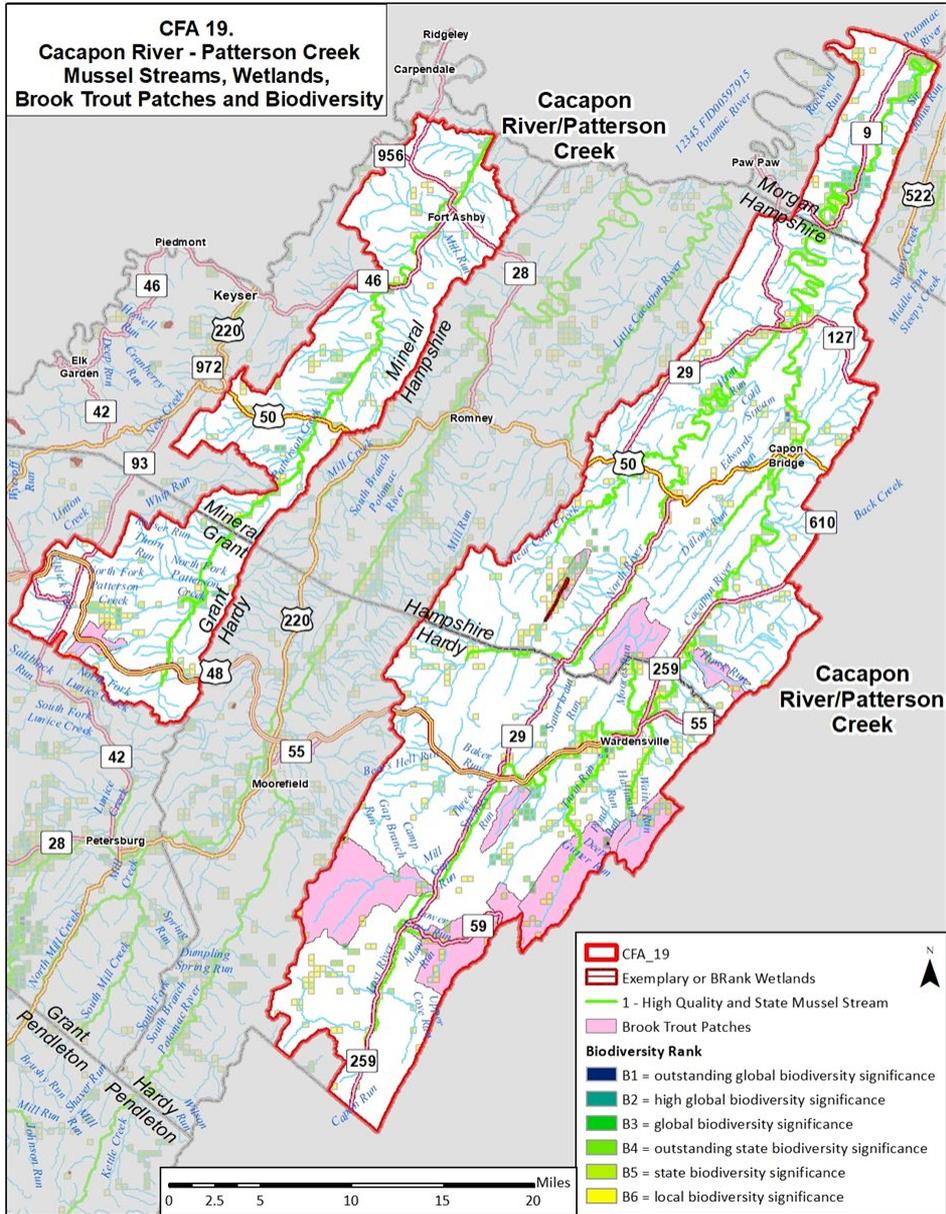
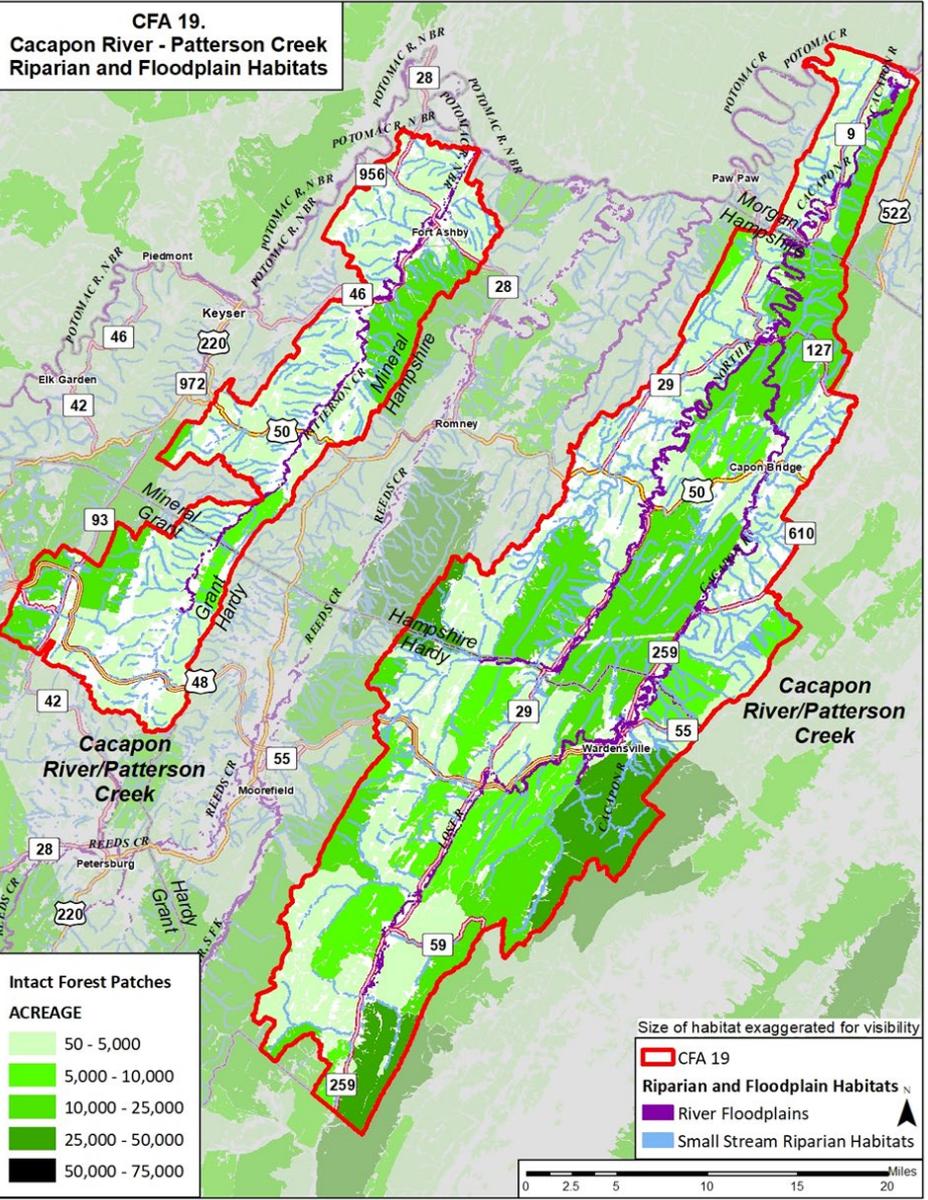
Conservation Focus Area Action Plans

Example: Cacapon River

Includes:

- Intro to SWAP and CFAs
- Overview of CFA (Priority Species, Partners and Public Lands Opportunities)
- Forest and Woodland Habitats
- Rock Outcrops, Cliffs and Talus, and Shale Barren Habitats
- Aquatic, Floodplain and Riparian Habitats
- Subterranean Habitats
- Agricultural and Developed Habitats
- Landscape Resilience and Connectivity
- Conclusion

Aquatic, Floodplain and Riparian Habitats



Aquatic, Floodplain and Riparian Habitats

Priority Aquatic Species

TAXA	SCIENTIFIC NAME	COMMON NAME
Reptile	<i>Glyptemys insculpta</i>	Wood Turtle
Reptile	<i>Clemmys guttata</i>	Spotted Turtle
Dragonflies & Damselflies	<i>Libellula flavida</i>	Yellow-sided Skimmer
Dragonflies & Damselflies	<i>Gomphus lineatifrons</i>	Splendid Clubtail
Dragonflies & Damselflies	<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail
Dragonflies & Damselflies	<i>Macromia alleghaniensis</i>	Allegheny River Cruiser
Dragonflies & Damselflies	<i>Calopteryx angustipennis</i>	Appalachian Jewelwing
Mussel	<i>Alasmidonta undulata</i>	Triangle Floater
Mussel	<i>Lasmigona subviridis</i>	Green Floater
Mussel	<i>Alasmidonta varicosa</i>	Brook Floater
Mussel	<i>Lampsilis cariosa</i>	Yellow Lampmussel
Fish	<i>Luxilus cornutus</i>	Common Shiner
Fish	<i>Notropis procne</i>	Swallowtail Shiner
<i>*Fish</i>	<i>Cyprinella analostana</i>	<i>Satinfin Shiner</i>
Fish	<i>Anguilla rostrata</i>	American Eel
Fish	<i>Salvelinus fontinalis</i>	Brook Trout

Aquatic, Floodplain and Riparian Habitats

Priority Riparian and Floodplain Species

TAXA	SCIENTIFIC NAME	COMMON NAME
Birds	<i>Parkesia motacilla</i>	Louisiana Waterthrush
Birds	<i>Riparia</i>	Bank Swallow
Reptiles	<i>Glyptemys insculpta</i>	Wood Turtle
Dragonflies and Damselflies	<i>Gomphus lineatifrons</i>	Splendid Clubtail
Dragonflies and Damselflies	<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail
Dragonflies and Damselflies	<i>Calopteryx angustipennis</i>	Appalachian Jewelwing
<i>*Plants</i>	<i>Carex davisii</i>	<i>Davis' Sedge</i>
Plants	<i>Ptilimnium fluviatile</i>	Harperella

Rare Plant Communities in Aquatic, Floodplain and Riparian Habitats.

HABITAT	COMMON NAME	G RANK	S RANK	RELATIVE ABUNDANCE
High Allegheny Wetlands	Red Maple - Black Gum / Peatmoss Swamp	GNR	S2	53%
High Allegheny Wetlands	Tussock Sedge Wet Meadow	G4G5	S3	34%
High Allegheny Wetlands	Threeway Sedge Fen	GNR	S1	25%
High Allegheny Wetlands	American Bur-Reed Marsh	G3?	S2	5%
High Allegheny Wetlands	Red Maple - Black Gum / Peatmoss Swamp	GNR	S2	53%
High Allegheny Wetlands	Tussock Sedge Wet Meadow	G4G5	S3	34%
High Allegheny Wetlands	Threeway Sedge Fen	GNR	S1	25%

Aquatic, Floodplain and Riparian Habitats

Habitat Stresses and Conservation Actions in Aquatic, Floodplain and Riparian Habitat

Habitat Stress	Conservation Action
Loss of floodplain, wetland, and riparian habitat	Habitat protection and monitoring through land use planning, conservation easements and other programs and activities
Loss of instream habitat	In-stream and riparian habitat restoration
Water quality- wastewater, stormwater, and effluents	Treatment, regulation and management of wastewater, stormwater, and effluents
Aquatic passage barriers	Remove or modify barriers
Water quality- loss of riparian vegetation, sedimentation	Stream buffer planting and fencing, landowner outreach
Cattle access into mussel streams	Stream buffer planting and fencing, landowner outreach
Increasing ice and water scour of streambanks and floodplains	Stream and buffer restoration/protection, consultation with experts, reduce flash flood impacts, monitoring
Hemlock wooly adelgid -hemlock mortality and loss of shade along headwater streams	Treat and underplant remaining riparian hemlock stands along headwater streams
Acid deposition in headwater streams	Improve pH in headwater streams
Invasive plants; Land use change and water quality; Climate change	Targeted treatment of cattail and other invasive plants; improve water quality

Aquatic, Floodplain and Riparian Habitats

Climate Stresses and Resilience Actions in Aquatic, Floodplain and Riparian Habitat

Climate Stresses	Habitat Resilience Actions
<ul style="list-style-type: none">• Increased flood frequency and severity, erosion, and sedimentation• Increased surface water temperatures, low-flow events, and water quality degradation• Increased risk of drought and wildfire• Increased competition from non-native invasive species, pests, and pathogens	<ul style="list-style-type: none">• Restore and maintain the health, diversity, and connectivity of riparian forests• Stabilize eroding streambanks and reconnect stream hydrology to floodplains• Clean and enlarge culverts and stream crossings to accommodate peak flows and aquatic organism passage• Minimize disturbance to riparian forests, promptly revegetate after disturbance, prevent the introduction and establishment of invasive plant species, and remove existing invasive species• Protect refugia for cold water habitat

Aquatic, Floodplain and Riparian Habitats

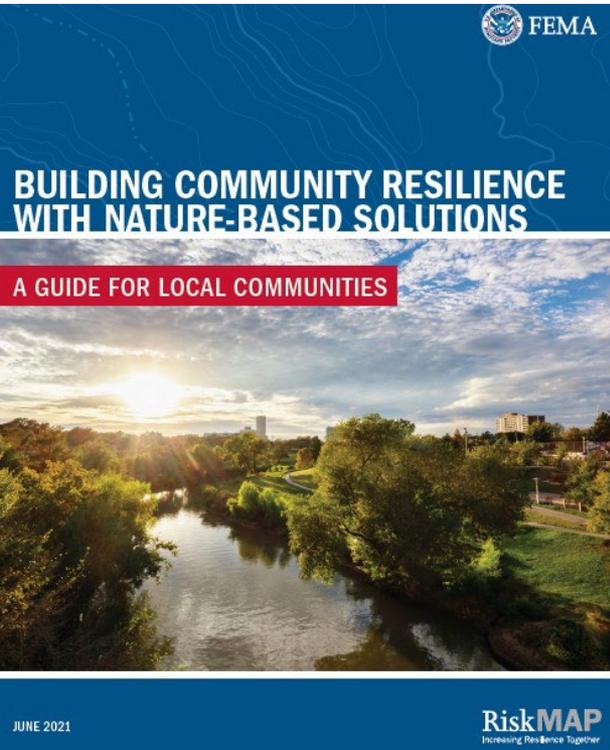
Implementation Plan for Aquatic, Floodplain and Riparian Habitats

Action	Partners /Programs	Effectiveness Measures
Riparian Corridor Habitat Protection: <ul style="list-style-type: none"> • Conservation Easements 	<ul style="list-style-type: none"> • County Farmland Protection Boards • Cacapon and Lost Rivers Land Trust • WV Land Trust • USDA Natural Resource Conservation Service ACEP 	<ul style="list-style-type: none"> • Acres of aquatic and riparian habitat protected for priority species • Abundance & distribution of priority species and habitats
Riparian Corridor Habitat Protection: <ul style="list-style-type: none"> • Land Use Planning 	<ul style="list-style-type: none"> • County Planning Commissions 	<ul style="list-style-type: none"> • Acres of habitat protected through land use planning, floodplain, and stormwater regulations
In-stream and riparian habitat restoration, streambank stabilization and floodplain re-connection	<ul style="list-style-type: none"> • USDA NRCS EQIP • USDA FSA CREP • WVDEP & WVCA • Trout Unlimited • USFWS Partners for Fish and Wildlife • Public Land Managers 	<ul style="list-style-type: none"> • Acres or linear feet of in-stream and riparian habitat restored for priority species • Before and after comparison: abundance & distribution of priority species
Planting and fencing stream buffer zones	<ul style="list-style-type: none"> • USDA NRCS EQIP • USDA FSA CREP • Trout Unlimited • USFWS Partners for Fish and Wildlife • WVDOF • WVDEP and WVCA 	<ul style="list-style-type: none"> • Acres or linear feet of stream buffer zones planted and fenced to protect priority species • Before and after comparison: abundance & distribution of priority species
Clean, enlarge or remove culverts and stream crossings for higher peak flow and aquatic organism passage	<ul style="list-style-type: none"> • Trout Unlimited • USFWS Partners for Fish and Wildlife • Public Land Managers 	<ul style="list-style-type: none"> • # barriers re-designed or removed • # miles stream opened • Before and after comparison: abundance & distribution of priority species

CFAs and Floodplain Management

Nature Based Solutions

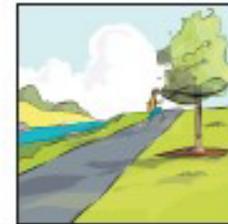
WATERSHED SCALE



LAND CONSERVATION

Land conservation is one way of preserving interconnected systems of open space that sustain healthy communities.

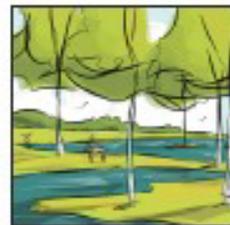
Land conservation projects begin by prioritizing areas of land for acquisition. Land or conservation easements can be bought or acquired through donation.



GREENWAYS

Greenways are corridors of protected open space managed for both conservation and recreation.

Greenways often follow rivers or other natural features. They link habitats and provide networks of open space for people to explore and enjoy.



WETLAND RESTORATION AND PROTECTION

Restoring and protecting wetlands can improve water quality and reduce flooding. Healthy wetlands filter, absorb, and slow runoff.

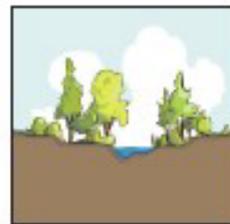
Wetlands also sustain healthy ecosystems by recharging groundwater and providing habitat for fish and wildlife.



STORMWATER PARKS

Stormwater parks are recreational spaces that are designed to flood during extreme events and to withstand flooding.

By storing and treating floodwaters, stormwater parks can reduce flooding elsewhere and improve water quality.



FLOODPLAIN RESTORATION

Undisturbed floodplains help keep waterways healthy by storing floodwaters, reducing erosion, filtering water pollution, and providing habitat.

Floodplain restoration rebuilds some of these natural functions by reconnecting the floodplain to its waterway.

CFAs and Floodplain Management

- **New WV Flood Resiliency Law:**
 - WV Disaster Recovery Fund would be used to encourage local governments to work on flood protection and prevention projects. It would prioritize low-income geographic areas and prioritize **nature-based solutions** — using the local environment and features to protect against flood damage.
 - https://www.wvnews.com/news/wvnews/west-virginia-legislative-committee-hears-plans-for-new-flood-resiliency-law/article_68063318-dca2-11ed-9951-678f2d54adfb.html
- **Building Resilient Infrastructure and Communities (BRIC) funds** can be used for
 - Capability and capacity building (C&CB) activities
 - Mitigation projects
 - Management costs

CFAs and Floodplain Management



Hazard Mitigation Assistance

Mitigation Action Portfolio



FEMA

Harris County Flood Control District Voluntary Acquisition Program

The voluntary acquisition program for homes at risk for repetitive flood losses in Harris County, TX, has acquired over 3,000 properties since 1995. Since the arrival of Hurricane Harvey, a Category 4 hurricane that struck Texas in 2017, the program has acquired 420 additional eligible properties. The program is managed by the Harris County Flood Control District, which also manages other projects and programs designed to reduce flood risk in Harris County. This highly successful program also faces a challenge of keeping up with demand; the County currently has a waiting list of over 1,000 residents who have applied to have their homes acquired through the program. In 2018, voters approved \$148 million for property acquisition as part of a \$2.5 billion bond measure to finance stormwater and flood protection measures in Harris County.

Addressed Hazards



PRIMARY HAZARD
Inland Flooding



Hurricanes

Protecting Life & Property

This program provides a solution for residents whose homes are at risk for repetitive flood losses for whom other options to protect their families and property are severely limited.

Restoring the Floodplain

Not only do these home acquisitions protect life and property, but they also allow portions of the natural floodplain to be restored, reducing impervious area and providing other ecosystem benefits.



Hurricane Harvey flood damage to homes in Harris County, TX
Source: Shutterstock



Harris
County, TX
FEMA Region 6



Community Lifelines

Hover over the Primary Lifeline to learn more.

PRIMARY LIFELINE



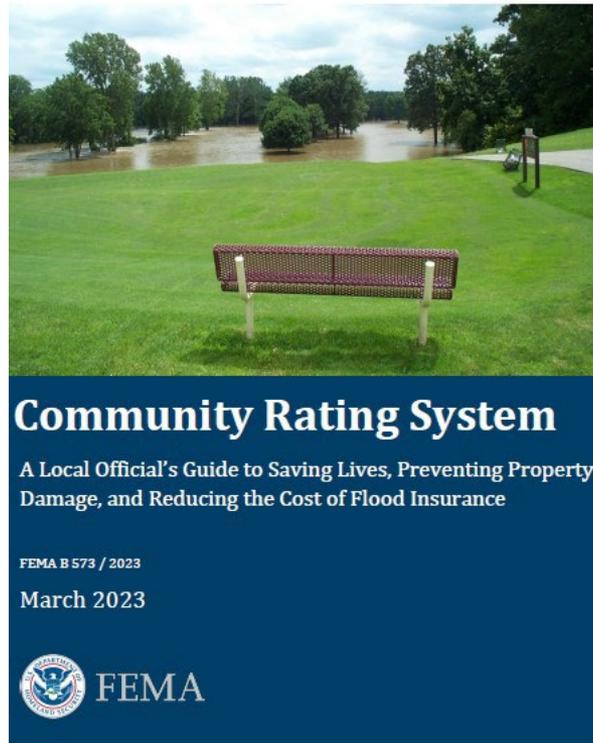
Safety & Security



Food, Water, Sheltering



Conservation Focus Area Action Planning



CRS:

- Outreach Projects (beneficial functions of floodplains)
- Open Space Preservation (keeping floodplain free from development)
- Stormwater Management (minimize soil erosion and protect water quality)
- Floodplain Management Planning (protect natural functions or conserve species in floodplain)
- Acquisition & Relocation (acquire and/or relocate floodprone buildings out of floodplain)