

Notes from July 26 NF's NC Restoration Meeting

Comments on restoration by topic (and individuals who asked to assist with future planning):

Topic #1: Restoration of Stream Systems and Watersheds to a Healthy Condition

(Bill Jackson)

- Expand to include restoration of eco-hydrologic function in riparian areas impacted by the Hemlock Woolly Adelgid (#7 in original write-up).
- Note that all roads and trails need to be sustainable.

Topic #2: Restoration of Rare Native Communities (Chris Kelly, Julie Judkins)

- Address dispersal corridors and road barrier issues – such as red spruce and Northern Flying Squirrel on the Nantahala, and road barriers impacting black bears.
- Include sustaining oak forest here (secondary topic).
- Clarify ecological zones of concern for oak – don't focus on cove forests.
- Expand to include restoration of American Chestnut restoration as a part of this topic (limited opportunities to follow through with this in the short-term).
- Include not just rare, but also declining communities.

Topic #3: Restoration of Fire-Dependent Ecosystems (David Ray)

- Include other types of disturbance-dependent communities – don't just limit to fire.
- Include Short-leaf and Table Mountain Pine habitats and fire-adapted ecosystems.

Topic #4: Restoration of Diversity in Low-Diversity Forest Stands (David Ray)

- Expand to include the restoration and maintenance of Oak forests (primary topic to include this discussion).
- While there are opportunities to cut pine stands, acknowledge that conifers are a part of ecological succession.
- Diversity is scale-dependent – need to be more site-specific in selecting species (such as white pine).

Topic #5: Restoration of Plant Communities by Controlling Invasive Species

(Julie Junkins, Bob Gale, David Ray)

- Identify habitats in advance of pest species moving it (like the Emerald Ashborer).

Topic #6: Restoration of Diversity in Wildlife Habitat (Don Mallicoat, David Bruton,

Steve Henson, Bennie Riddle, Steve Nuval, Josh Kelly)

- Restoration need related to improve the age structure of existing forests – a need to increase early successional habitat.
- Need to include a look at mid and high elevational early successional habitat needs.
- Current early successional habitat is often present in isolated pockets that provide little or no connectivity.
- Science is available to support this need.

- Concern in how it's done – especially how to avoid the introduction of invasive plants.
- Broad support for the goal, but interest groups don't all agree on the methods to get there – will need to work on finding common ground.
- Cross-cuts with many other restoration issues.
- Most compelling reason – many wildlife species at risk and/or in decline.
- Not meeting Forest planning guidelines for amount of early successional habitat
- Include both game and non-game species.
- Increasing early successional habitat will also provide benefits to hunters and the forest products industry.
- Younger stands provide for better nutrient uptake – enhances water quality.
- Who To Involve (potential partners) - NWTF, Ruffed Grouse Society, Wildlife Forever (plus others).

Topic #7: Restoration and Recovery of Threatened and Endangered Species

(Carolyn Wells, Hugh Irwin, Josh Kelly, David Ray)

- Include rare as well as threatened and endangered species.
- A component of restoring fire to fire-dependent ecosystems.
- Broad support for these efforts (for fire) from conservation groups and fire scientists.
- Could be a catalyst for larger landscape restoration.
- Would be appropriate as a separate topic if there are key species not represented by “rare community.”
- Need to establish priorities – by area.

Topic #8: Restoration and Preservation of Native Hemlocks by controlling the Hemlock Woolly Adelgid (Josh Kelly, David Ray)

- Thousands of acres of Hemlock stands remain viable on the Pisgah National Forest – these trees are outside of areas currently identified for treatment and long-term conservation.
- Three forest types are at risk (Carolina Hemlock, ?, ?).
- There is deep public concern and support for this project.
- Carolina Hemlock may already be extirpated – this topic may better fit under #2- Rare Communities.
- High potential exists for partnerships between govt, industry and nonprofit organizations.
- This item is linked to the restoration of stream systems and watersheds (#1) and the restoration of rare communities (#3).
- Should avoid replacing Hemlock with other species if there is a possibility the Hemlocks can be saved.
- Monitoring of biological controls not effective – also problems with applying beetles.
- There are major problems using white pines as Hemlock replacement – need to also explore red spruce in appropriate places.

Status of other original topics: #6 (Restoring American Chestnut in the Southern Appalachian National Forests), #7 (Restoring Eco-hydrologic Function in Riparian

Areas Impacted by Hemlock Woolly Adelgid), #8 (Restoring and Maintaining Oak Forests):

- General consensus was to include these as components of the original 5 topics from December Restoration meeting – these are more “research” than “restoration” issues.
- Non-timber forest products should be a component in general restoration strategies.
- Include restoring severely burned areas after fires.
- Incorporate “climate change” as a threat to be considered under all restoration topics.
- Consider measuring and maximizing the amount carbon sequestration in project planning.
- Solutions need to consider non-federal lands as well.
- Need to be mindful in thinking about what is going to replace oak.
- Maintenance and monitoring are critical to successful restoration efforts.

Other comments and requests by attendees:

- Recognize the importance of viewshed management in many areas of the forest – this can be both a support and a potential barrier to restoration efforts – will need to be considered in planning silvicultural practices and techniques.
- Wants to see a timeframe for restoration process.
- Wants to be kept informed about process.
- Timber sales should be considered as a method for implementing projects (nature-based silviculture).
- A lack of confidence that “this” will get done.
- Giving FS partners a “voice” is essential.
- Partners are tired of waiting for FS – they have been to too many meetings – it’s hard to motivate their members.
- Partners have a sense of urgency – too often FS rules and regulations have been a barrier.
- Concern that the topic groups have too much overlap – addressing them separately takes away opportunities for synergy.
- Should consider taking multiple paths (short-term projects that can be implemented soon vs. longer-term discussions).
- Consider a third party facilitator independent of the FS to continue the collaborative process.

Summary of Restoration Topics for NC

1. Restoration of Stream Systems and Watersheds to a Healthy Condition

Goals/Objectives:

- Improvement of water quality
- Enhancement of riparian habitats.
- Reduced sedimentation.
- Improved habitat for aquatic species,
- Protection of high-value occurrences of hemlock and replacement species for Declining hemlocks on riparian sites.
- Mitigation of harmful acid deposition from abandoned mines.

Potential activities:

- Establishing a sustainable road system that can be adequately maintained into the future [this includes incorporating appropriate road repairs, maintenance activities, and closing or decommissioning of roads];
- Mitigating erosion at dispersed and developed recreation sites through re-design or closures of damaging sites;
- Decommissioning or re-designing user-created trails;
- Preventing illegal off-road vehicle use;
- Expanding the use of best management practices for land-disturbing activities.
- Replacing culverts and improving stream crossings to
- Re-stocking native species such as brook trout and introducing large woody debris where appropriate.
- Expanded protection measures for key stands of hemlock as well as replacement with other species to restore the ecological function of degraded hemlock stands in riparian areas.
- Acquisition of private lands along headwaters and undeveloped waterways.
- Public education opportunities - citizen workshops, Adopt-a-Stream cleanups. “Kids in the Creek” educational opportunities, and other volunteer partnerships.

Barriers/Threats:

- Lack of federal funding and staff.
- Lack of control over damaging activities on adjacent private lands.
- Uncontrolled sedimentation sources.
- Increasing regional development.
- Forest Service roads (especially those where the agency cannot control access).
- The sheer magnitude of the problem.
- Climate change.
- Impacts from urban expansion.

Information/Research needs:

- Watershed-scale assessments of roads and streams (to identify highest priority areas and the synthesis of existing data).
- Surveys of native aquatic populations.
- Pilot studies on hemlock replacement to long-term assessment of anticipated climate change impacts on stream conditions and riparian species (evaluation of white pine stands that have already become established in riparian areas would provide an excellent opportunity to more quickly assess the potential for white pine as a replacement species for hemlock).

2. Restoration of Rare Native Communities

Rare native communities were recognized as increasingly vulnerable components of the unique character of the Southern Appalachian Mountains.

Goals/Objectives:

- Re-establish fire or other disturbances to habitats such as bogs, balds, canebrakes, and cliffs.
- Correct problems with hydrologic function on hillside bogs and montane alluvial wetlands and forests. Restoration programs would also consider caves, rock outcrops, serpentine barrens, spruce/fir forests, shortleaf pine stands, and other less common ecosystems.

Activities:

- Burning, cutting, mowing, grazing, control of non-native invasive species (NNIS), land acquisition, experimental plantings, installation of boardwalks, and closure orders.
- Identify examples of rare communities where ecosystem dynamics are functioning well to use as reference areas in rare ecosystem restoration.
- Protect existing relatively intact areas of high ecological integrity as a part of the overall strategy for ensuring the continued existence of rare native communities.

Barriers:

- Smoke management.
- Damage to cultural sites.
- Funding.
- Beaver conflicts.
- Geographic isolation/access.
- Wilderness designations.
- Lack of economies of scale.
- Reluctance to do active management.
- Need for repeat burning.

Information/Research needs:

- Focus on the communities and habitat relationships that we understand the least including information on the role of fire in balds, bogs, and canebrakes;
- Habitat needs of neotropical migratory birds;
- Mapping of rare communities;
- Effects of disturbance on rare plants.

Recommended Actions: Find partners to identify the areas most at risk and begin developing demonstration projects for the highest priority areas. Identify priorities by Forest, identify priorities for NNIS control, find funding sources, find additional partners, design demonstration projects, look for ties to state wildlife action plans, and update surveys. It was noted that when American chestnut seedlings become available in appreciable quantities, restoration of this species should be a top priority.

3. Restoration of Fire-Dependent Ecosystems

Fire has been identified by scientists as a factor contributing to the diversity of plants communities in the Southern Appalachians. Climate change and long-term wildfire fuel accumulation has and will continue to increase future fire risk and occurrence.

Goals/Objectives:

- Restore and maintain fire-dependent ecosystems (but strive to do no harm).
- Restoration of fire to open areas like meadows and balds, fire-dependent pine stands such as Table Mountain and pitch pine, and xeric oak systems and oak savannahs.
- Understory burns to control laurel and rhododendron and prescribed fires to enhance habitat for threatened and endangered species, control invasives, and reduce fuel loads and initiate recovery in areas impacted by Southern Pine Beetle.
- Evaluate growing season burns, establish restoration burn cycles versus long term maintenance needs, evaluate the use of fire in wilderness areas, and create small burns for public information and education.
- Monitoring in ecosystems that are not clearly fire dependent
- monitoring of effects from different fire returns

Barriers:

- Smoke and air quality issues.
- Small windows available for prescribed burning, particularly with continuing drought conditions.
- Public health concerns.
- Safety and management challenges with heavy fuel loadings.
- Costs.
- Media and public perceptions.
- Fragmentation and diversity of land ownership.
- Wildland/urban interface constraints.
- Availability of qualified resources.
- The need for a clearer understanding of fire-dependent ecosystems.

Research/Information needs:

- Oak regeneration studies,
- appropriate fire intervals for Table Mountain pine regeneration and other fire-dependent,
- climate-change tolerant species,
- use of fire to mimic natural processes,
- synthesis of human health issues,
- mapping of high priority areas,
- more definitive smoke models,
- a better understanding of the effects of fire on control of invasive species.

Recommended Actions: Develop joint, cross-boundary projects with partners; more support to Fire Learning Networks; public education on smoke management and prescribed fires; completion of wilderness fire plans; initial focus on pilot projects in areas of clear agreement; strategic prioritization of restoration treatments; monitoring design to answer research questions as well as treatment effects; and Green River research with and without mechanical treatment.

4. Restoration of Diversity in Low-Diversity Forest Stands

Many forested areas that were re-planted or naturally regenerated after timber harvesting and other disturbances have become dominated by even-aged single species such as white pine, yellow poplar, or loblolly pine and do not provide the diverse habitat that typifies

native communities in the Southern Appalachians. The intent of this focus area is to restore species and structural diversity to low-diversity, virtually monoculture stands.

Goals/Objectives:

- Increase diversity in species composition and structure of low-diversity forest stands. restore species and structural diversity to low-diversity, virtually monoculture stands.
- Restore diversity to include consideration of hydrologic functions (since many sites were barren when reforested).
- use of site-adapted species.
- consideration of long-term economics.

Activities:

- Demonstration projects.
- Thinnings or release of desired stems.
- Prescribed fires.
- Stewardship contracts.
- Demonstration of alternative logging systems that have low impact.
- Consideration of wildlife value.
- Potential for future insect and disease infestations.
- Use logging methods to help meet these goals: uneven aged management or Group selection where practicable, commercial and pre-commercial thinning,
- Development of a restoration template.
- Utilization of timber stand improvement dollars.
- Treatment of non-native invasives as part of the prescription when thinning.

Barriers:

- Public objections to the harvest of trees from public lands.
- Aesthetic impacts.
- Economics of harvest opportunities.
- Markets for the wood, ecological constraints,
- Lack of advanced regeneration.
- Degraded site quality, availability of planting stock from nurseries,
- Accessibility to monoculture stands, and
- Workforce or infrastructure capability for small diameter harvests.

Research/Information needs:

- Site information such as FSVeg data,
- Silviculture prescriptions.
- List of desired tree species
- Descriptions of desired future ecological conditions.
- Site capability (soil productivity) maps.
- Current research on succession, marketability now and in the future.
- Geospatial mapping of all monoculture stands.
- NatureServe information.
- A whole suite of ecological information.

Recommended Actions: Identify site-specific projects, get internal and external buy-in and support, survey markets for wood needs, and involve partners along the way.

5. Restoration of Viable Native Plant Communities by Controlling Invasive Species

Although associated with several other focus areas, control of non-native invasive species was identified as a separate and significant factor in restoring the viability of native plant communities in the Southern Appalachians.

(To be completed in future):

Goals/Objectives:

-

Activities:

-

Barriers:

-

Information/Research Needs:

6. Restoration of Wildlife Habitat

- Restoration need related to improve the age structure of existing forests – a need to increase early successional habitat.
- Need to include a look at mid and high elevational early successional habitat needs.
- Current early successional habitat is often present in isolated pockets that provide little or no connectivity.
- Science is available to support this need.
- Concern in how it's done – especially how to avoid the introduction of invasive plants.
- Broad support for the goal, but interest groups don't all agree on the methods to get there – will need to work on finding common ground.
- Cross-cuts with many other restoration issues.
- Most compelling reason – many wildlife species at risk and/or in decline.
- Not meeting Forest planning guidelines for amount of early successional habitat
- Include both game and non-game species.
- Increasing early successional habitat will also provide benefits to hunters and the forest products industry.
- Younger stands provide for better nutrient uptake – enhances water quality.

(To be completed in future):

Goals/Objectives:

-

Activities:

-

Barriers:

-

Information/Research Needs:

Who To Involve (potential partners)

NWTF, Ruffed Grouse Society, Wildlife Forever (plus others)

7. Restoration of Threatened and Endangered Species

- Include rare as well as threatened and endangered species.
- A component of restoring fire to fire-dependent ecosystems.

- Broad support for these efforts (for fire) from conservation groups and fire scientists.
- Could be a catalyst for larger landscape restoration.
- Would be appropriate as a separate topic if there are key species not represented by “rare communities.”
- Need to establish priorities – by area.

(To be completed in future):

Goals/Objectives:

-

Activities:

-

Barriers:

-

Information/Research Needs:

8. **Restoration/Saving of Some Remaining Hemlock Stands**

- Thousands of acres of Hemlock stands remain viable on the Pisgah National Forest – these trees are outside of areas currently identified for treatment and long-term conservation.
- Three forest types are at risk (Carolina Hemlock, ?, ?).
- There is deep public concern and support for this project.
- Carolina Hemlock may already be extirpated – this topic may better fit under #2- Rare Communities
- High potential exists for partnerships between govt, industry and nonprofit organizations.
- This item is linked to the restoration of stream systems and watersheds (#1) and the restoration of rare communities (#3).
- Should avoid replacing Hemlock with other species if there is a possibility the Hemlocks can be saved.

(To be completed in future):

Goals/Objectives:

-

Activities:

-

Barriers:

-

Information/Research Needs: