Forest Service Deep Dive #3 – Species Analysis
March 11, 2020
Question and Answer

Q: Does the Forest Service have solid baseline data on game species and how will you monitor against it over the life of the plan?
A: The Forest Service used data for deer, turkey, grouse, bear, and other demand species from the North Carolina Wildlife Resources Commission (NCWRC). All data used in the analysis is referenced in DEIS Appendix C or the process record. The monitoring plan is still under construction but will include continued partnership with the NCWRC.

Q: Describe how outputs from Spectrum analysis (an ecosystem management modeling tool) were used in the ESE Tool (the Ecological Sustainability Evaluation species analysis tool)?
A: The Spectrum analysis provided modeled outputs of structural conditions created by each alternative for each ecozone (such as rich cove, northern hardwoods, and spruce-fir forest). These numbers informed how outcomes for species reliant on those ecozones and structural conditions were estimated.

Q: How sensitive is the species analysis to different outputs from Spectrum?
A: The Spectrum analysis output used in the ESE tool was largely the structural outcomes of alternatives for each ecozone and ranked as poor, fair, good, and very good. Natural Range of Variation (NRV) was used to create these rankings, with very good indicating that element conditions are optimal, and poor indicating that element conditions are inadequate. If the ecozone diverges from NRV, it scores less. Some ecozones (ex. drier forest types) have a broader NRV and could be considered "very good" within a larger range, so sensitivity is variable.

Q: Does supporting the "persistence" of threatened and endangered species really mean you are contributing to the recovery of that species? If so, please say more about this.
A: The planning process requires that the plan provide ecological conditions to both maintain the diversity of plant and animal communities and the persistence of native species in the plan area. This term of persistence applies to management of species of conservation concern.

For threatened and endangered species, the Forest Service must contribute to the recovery of threatened and endangered species within the agency's ability. Maintaining or improving habitat conditions is a first step in recovery. Therefore, plan enables activities that contribute to recovery such as through habitat improvement projects (ex. southern Appalachian bogs and balds) by reducing competition to aid desired species and removing non-native invasive species. The plan also restricts certain actions, such as restrictions on activities at certain times of the year, in order not to negatively impact T&E species. When it comes to contributing to species recovery, it is important to note that the Forest Service is just one actor and that recovery often requires looking at a larger landscape; there are some circumstances that impact threatened and endangered species are outside USFS control.

Q: How are you incorporating the recovery plans written by the U.S. Fish and Wildlife Service (USFWS)?
A: The Forest Service works cooperatively with the USFWS. The plan calls for consistency with recovery plans rather than repeating the content of those plans within the forest plan. The plan direction states "Habitats are consistent with recovery plans and Biological Opinions for federally-listed and proposed species in order to contribute to recovery of these species" (PAD-DC-01). By incorporating the plans in

this way, rather than by repeating their contents, the forest plan will be continue to provide the most up-to-date guidance on species recovery consistent with the U.S. Fish and Wildlife Service. Rather than needing an amendment to the forest plan, the Forest Service can incorporate new guidance immediately. This is the standard approach within forest plans.

Q: Does persistence of demand species mean maintenance at current levels?
A: According to the planning directives, the words "persist over the long-term" means the species continues to exist in the plan area over a sufficiently long period that encompasses multiple generations of the species, the time interval between major disturbance events, the time interval to develop all successional stages of major habitat types, or the time interval needed for the overall ecosystem to respond to management. While persistence is the minimum expectation, but the goal of the plan is to increase populations as habitats are restored or maintained. For example, there is work to increase populations of ginseng, which has been heavily harvested for centuries. Similarly, as wildlife habitats are increased on the landscape (e.g. young forest), or restored (e.g. open forest conditions), populations of demand species are expected to improve. This strategy is presented in the DEIS and Appendix C (reference specific ecosystems and species groups).

Q: Did you use data from the NC Natural Heritage Program (NCNHP)?
A: Yes, the Forest Service gets NCNHP data every quarter, and data from 2018 was used in the analysis. This data was spatially explicit and was used for the outcomes assessment.

Q: How would I find expected outcomes for specific species under each alternative?
A: This information can be found in Chapter 3.3 and Appendix C of the DEIS. If you are interested in a particular species analyzed, reference the suite of Table As in Appendix C for the ecozones, unique habitats, or species groups the species is associated with. Refer to the anticipated results for those elements. Also, there are color-coded tables of anticipated effects of alternatives on unique habitats, federally-endangered or threatened species, and demand species in Chapter 3.3 of the DEIS.

Q: Are you protecting all rare habitats?
A: We are explicitly recognizing and providing desired conditions for the listed unique habitats found in Chapter 3.3 of the DEIS, which are the rare habitats identified in the planning process beginning with the forest plan assessment.

How about basic oak-hickory forests?
Some habitats like basic oak-hickory forests are not listed as rare habitats but are included in plan direction as part of one of the ecozones. Some ecozones have variations, and some of those variations are rarer than others, and the varieties were grouped together for the analysis. There is not always good data on where those sub-habitats occur. While basic oak-hickory forest is rarer than some of the other subtypes within mesic oak ecozone, it is not considered exceedingly rare. According to NatureServe the current global rank is G3, although more complete data across its range of NC, GA, SC, & TN might decrease the rank to G3G4, since NC has a rank of S3. Based on a query within the NC Natural Heritage Program data, there are over 110 occurrences in NC with at least 48 of those within the Nantahala and Pisgah NFs.

Q: The outcomes of the ESE tool don't seem to show much if any difference between alternatives. Why is this when there are differences between alternatives in terms of the distribution of management areas? Is this the result of an assumption that habitat anywhere is as good as habitat

anywhere else? This may make sense for species that are broadly dispersing, but not for species that are dispersal limited and aren't equally likely to be found wherever suitable habitat may be present.
A: This forest plan is addressing 1.1 million acres, and at that scale some finer scale differences may not be as evident as they would be during a project level NEPA analysis. Plan direction and plan components are nearly the same across all alternatives. The desired conditions, standards and guidelines that provide habitat and species protections are the same across all alternatives. Additionally, the amount of activities planned is the same across alternatives. What differs most between alternatives is where activities occur. Given this form of alternative development, there is more similarity than there would be if plan components varied more by alternative. There is not an assumption that habitat in one location is as good as habitat anywhere else. Habitat protections (in the form of plan components) are in place in all alternatives that are triggered whenever needed across the landscape. For species that are only found in some locations on the landscape, these were evaluated by looking at species groups associated with ecosystems and rare habitats. Differences between alternatives as shown in the DEIS analysis and appendix C. See the question below for more information on dispersal limited species.

Q: How does the analysis deal with contiguity and connectivity of important habitat areas? Specifically for dispersal limited species that are connected to particular places?
A: Connectivity is addressed in multiple places in the plan, such as in the climate change section that draws on science and modeling from The Nature Conservancy. Connectivity is also addressed in the sections on ecological conditions and terrestrial ecosystem analysis and old growth analysis. Some of the connectivity concern for dispersal-limited species is addressed in the ESE Tool through the use of road density indicators a surrogate for fragmentation/connectivity, and the ESE Tool contains a species group, Road Density Sensitive Species, specifically to address this issue.

Additionally, there are spatial components of the analysis that address dispersal-limited species. For example, many dispersal-limited species are aligned with specific unique habitats, such as southern Appalachian bogs. Those rare habitats were analyzed specifically for risks of impacts, such as from recreation or non-native invasive species. The risk to those special habitats were in part based on management areas, which differ across alternatives. Management areas were put into four groups ranked from most likely to have human activity (Matrix and Interface) that might disrupt these rare habitats to those least likely to have such activity (Wilderness). The four groups can be found on page 157 of the DEIS. Rare habitats put into more active management areas in one alternative in contrast to another might show more risk, which would be reflected in projected outcomes.

And finally, there are standards (e.g. PAD-S-02) that address the need to keep analyzing for dispersal-limited species at the project level in case of rare habitats and species, which is the relevant scale for many of these discussions.

Q: Can you speak on the monitoring component of the plan? What data from other agencies will you rely on to monitor species population trends versus what monitoring will you do in house?
A: For many species, the Forest Service used relevant and reliable data from the Wildlife Resources Commission and other state agencies. The Forest Service will continue to work with these partners in monitoring efforts. The monitoring plan will rely on focal species to understand how implementation is working to meet goals.

Q: Can you explain the reasoning behind the consideration of an Ecological Interest Area (EIA)? This management area appears to be specifically aimed at biodiversity and seems important for guiding management.

A: In 2017, some members of the public thought that in there were locations within Matrix where, the management opportunities were too flexible and needed more plan level constraints on what types of projects would be proposed there. Generally these locations were places that on the forest that are substantially unroaded areas, with some natural areas and existing old growth, but these areas are not as exceptional as Special Interest Areas. To respond to the concern that some had about these areas staying in Matrix, the management area Ecological Interest Area was developed. Ecological Interest Areas allows active management that is focused on species composition and allows active restoration, including fire and mechanical restoration. The size and configuration of this area vary by alternative.

It is important to note that Ecological Interest Areas is not the only management area focused on biodiversity – biodiversity is part of many management areas and forestwide direction. Biodiversity is one of the resources that the forest manages for everywhere. Each management area makes specific tools available for management. In the Roan Mountain management area the opportunities and tools for managing biodiversity are different from the opportunities and tools in Interface or Backcountry or designated Wilderness, but biodiversity is part of the thinking all across the forest. There are also Special Interest Areas (SIAs), which include some of the best examples of rare or unique habitats.

Q: Can you describe how you determined what aquatic species are in the hydrologic modification sensitive, nonpoint source pollution sensitive, point source pollution sensitive, and sediment sensitive groups?
A: Within the ESE Tool, aquatic species were associated with habitat types and/or particular stressors. Sedimentation or certain types of pollution, and other environmental stresses and threats are well documented on NatureServe, which was the primary source of data, but further data was gathered when necessary.