

Biennial monitoring and evaluation snapshot

Daniel Boone National Forest

2021

Are we meeting our goals?

During 2015-2019, the Daniel Boone National Forest (DBNF) faced drought, an unusual number of wildfires, and rising visitor demand along with increasing impacts from vandalism and illegal camping. Nonetheless, we successfully maintained and protected many valuable natural resources, recreational opportunities, and heritage sites; and contributed jobs and labor income to local communities. Here are some key findings:

- In 2016, the DBNF supported an estimated **920 jobs and contributed to about \$36,716,000 of the labor income in local communities.**
- We have exceeded forest plan and recovery plan requirements for white-haired goldenrod.
- We treated about **2,400 acres of hemlock** to protect against future outbreaks of hemlock woody adelgid, an invasive insect that has been widespread on the forest for several years.
- Our white fringeless orchid population is declining. Populations of bat species susceptible to white nose syndrome continue to decrease. The decline in freshwater mussel populations continues.
- Deferred maintenance of designated recreation sites has increased to more than \$5.6 million and has led to the **closure of popular campgrounds.**

Recommended changes—We need to increase active management of young oak and shortleaf pine to promote regeneration. We also need more active management to increase early seral habitat, minimize insect and disease outbreaks, and reduce the risk of oak decline. Increasing active management will directly and indirectly boost social and economic contributions to our local communities.

Summary of monitoring results

Status of select ecosystems

Vegetation monitoring across all four districts **shows continued improvement.** We implemented projects on nine watersheds between 2010 and 2020, improving their watershed condition class ratings.

Between 2015-2019, the number of potential old-growth trees more than doubled from our last monitoring report. In addition, nearly **74% of forested stands are productive** and providing habitat for species that depend on upland non-riparian areas. We also have a variety of sites that provide habitat for species that need minimal competition, like shortleaf pine on ridgetops, or that need enriched soil, like yellow poplar in riparian zones.

However, approximately 40% of oak forested stands on the DBNF have a **high to very high-risk rating for oak decline.**

Social, cultural, and economic sustainability

In 2016, the DBNF supported an estimated **920 jobs and contributed to about \$36,716,000** of the labor income in local communities. The DBNF influences the largest rural area of all the national forests in Region 8.

Between 2000 and 2016, the area around the DBNF showed no population growth and had the second highest unemployment rate in Region 8 at 7.2%.

Effects of management to protect or restore select populations

Our **white fringeless orchid population is declining**. We are also seeing declines in bat species that are susceptible to white nose syndrome, as well as declines in freshwater mussel populations.

Management indicator species are declining in woodlands, mature forests, grasslands, and yellow pine forests. These downward trends could be due to decreases in our management activities. For example, early successional species continue to decline because we are falling short of forest plan objectives for young forest acreages.



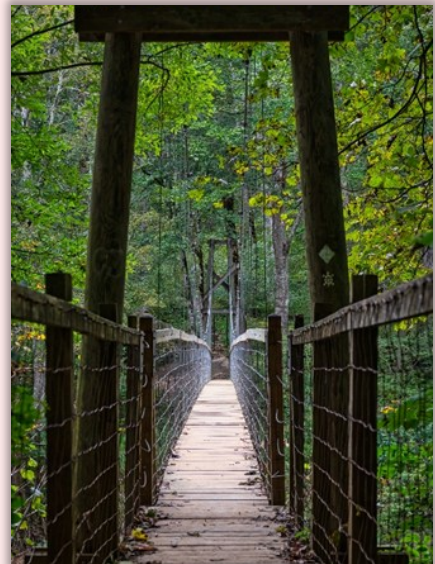
We have **exceeded our recovery plan requirements for white-haired goldenrod**. Between 1997-2017, birds associated with closed canopy mature forests showed positive annual trends. This is expected because **~53 percent of our forests are more than 90 years old**.

Status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives

In 2017, more than 90% of visitors reported feeling safe in developed, undeveloped, and wilderness areas. That same year, **92% of survey respondents felt satisfied with developed facilities**; and 49% reported satisfaction with undeveloped areas.

Rising visitor demand for dispersed recreation areas and trails has required additional resource investments in forest trail staff, conservation trail crews, partnerships, and volunteers.

The **backlog of facility and trail maintenance needs continues to be a significant issue** on all districts. Only 57% of developed recreation sites and facilities are currently being maintained to standard. More than \$5.6 million is needed to bring facilities up to standard.



Legal and illegal off-highway vehicle use is causing wide-spread soil degradation. User-created trails and campsites are contributing to soil disturbance and the spread of non-native species. Illegal, user-created campsites in rock shelters are impacting rare plant species. Cultural and heritage sites across the forest are showing impacts from trampling, graffiti, camping, and looting.

Climate change

Similar to the rest of the United States, we are experiencing increased threats from fire, insect and plant invasions, disease, extreme weather, and drought. However, Kentucky has not experienced significant overall warming since the early 20th century. Precipitation has generally been near to above average since 1990. The number of extreme precipitation events (more than 2 inches of precipitation) has been highly variable but with an overall upward trend.

