

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
NEW ALBANY DIVISION

MONROE COUNTY BOARD OF)
COMMISSIONERS, *et al.*,)
)
Plaintiff(s),)
)
v.)
)
UNITED STATES FOREST SERVICE,)
et al.,)
)
Defendant(s).)

Cause No. 4:20-cv-00106-TWP-DML

DECLARATION OF BRENT A. RUDOLPH, PH.D.

I, Brent A. Rudolph, declare:

1. I am over the age of eighteen, and if called to testify, would and could state as follows.

2. I am the Chief Conservation and Legislative Officer for the Ruffed Grouse Society (RGS) and American Woodcock Society (AWS). I have held these positions since March 2019 and previously worked as Director of Conservation Policy and Interim Director of Conservation Programs.

3. My responsibilities include to supervise and provide leadership to RGS & AWS Forest Conservation Directors to promote healthy forests and enhance habitat on public and private forest lands, to provide for thriving ruffed grouse, American woodcock, and other forest wildlife populations throughout the United States. I also work with RGS & AWS staff and members, government agency personnel, other organization and corporate partners, and the general public to implement a wide range of programs, and projects to enhance forest health utilizing sound scientific management principles.

4. Since 2013, I have served as an Assistant Adjunct Professor with Michigan State University, College of Agriculture and Natural Resources, Department of Fish and Wildlife. I provide expertise in applied wildlife research, management, policy, and outreach, particularly through the Boone and Crockett Quantitative Wildlife Center, Human Dimensions Focus Area, and the Conservation Criminology program.

5. I have a Ph.D. from Michigan State in Fisheries and Wildlife which I earned in 2012 while working with the Michigan Department of Natural Resources. My studies examined factors affecting hunters' trust in the agency and compliance and cooperation with bovine tuberculosis eradication policies. Previously, I obtained an M.S. in Environmental and Forest Biology from the SUNY College of Environmental Science and Forestry, at Syracuse, NY, and a B.S. in Biology from Ohio Northern University. I am a co-author of three book chapters and more than two dozen peer-reviewed articles and technical reports.

6. I am familiar with the forest ecology of Indiana and of the Hoosier National Forest, particularly including the area of the Houston South Project.

7. Since the early 1900s, regeneration of previously harvested forest stands, suppression of wildfire, and a lack of active forest management in Indiana has resulted in aging forests (Parker 1997, Schmidt et al. 2000, Gormanson et al. 2016).

8. A lack of young forest habitat (i.e., 0-20 years old) on the landscape is partially responsible for declines in wildlife populations for species that rely on young forest or disturbed forested habitat to meet some or all of their life cycle needs (Askins 2000, Dessecker and McAuley 2001, Hunter et al. 2001, Backs 2008, Flather et al. 2008, Backs and Castrale 2010; King and Schlossberg 2014, Niemi et al. 2016).

9. Additionally, important mast producing species such as oak (*Quercus* spp.) and hickory (*Carya* spp.) rely on periodic disturbance (natural and/or human-induced) in order to regenerate, and the absence of disturbance is resulting in the replacement of these species by more shade-tolerant species such as red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), and Basswood (*Tilia americana*). This shift in species composition (referred to as

mesophication) of forest stands will greatly impact the populations of several wildlife species of conservation concern as well as those with high public value (Hunter 2001, McShea et al. 2007, 2016, Porter et al. 2011).

10. The Ruffed Grouse Conservation Plan (Grouse Plan) was developed by the Resident Game Bird Working Group of the Association of Fish and Wildlife Agencies to guide wildlife agency habitat management initiatives. The Grouse Plan identifies the greatest barrier to reversing population declines of ruffed grouse and of other wildlife that require thick, young forest habitats as the negative public attitude toward the type of habitat management these species require (Dessecker et al. 2007). Indiana is at the epicenter of this challenge.

11. Forest Inventory and Assessment (FIA) data compiled by the U.S. Forest Service (Service) indicate that in 2018, only 5.2% of forest land in the state of Indiana included stands in the 0-20 year age category considered young forest habitat. These young forest lands in Indiana declined 71.8% since 1986. FIA data indicate in 2018, young forest occurred on only 1.5% of stands on Indiana federal lands, a decline of 90% since 1986.

12. Stand data for the proposed silvicultural treatment area of the Houston South Vegetation Management and Restoration Project (Project) shows no stands in the 0- to 9-year age class, though the 2006 Hoosier National Forest Land and Resource Management Plan (Forest Plan) establishes a desired amount of early successional forest habitat of 4-12% for the area.

13. The decline of ruffed grouse in Indiana follows these trends of habitat loss. Ruffed grouse occurred in 41 of 92 Indiana counties in the early 1980s. They were a popular game species at the time, with approximately 20,000 ruffed grouse annually harvested by around 17,000 licensed hunters. During just three decades during which active, sustainable forest management was neglected in the state, grouse populations declined sufficiently that the 2017 statewide grouse drumming survey completed by the Indiana Department of Natural Resources (IDNR) reported zero drumming grouse detected on 14 roadside routes for the fifth year in a row. Ruffed grouse were added to the Indiana list of Species of Special Concern in 2015 – the same year the state grouse hunting season was suspended – and added to the Indiana State

Endangered Species list on December 16, 2020. Under state law, state-listed species may not be “taken,” meaning harassed, hunted, captured or killed. Ind. Code §§ 14-22-34-5, 14-22-34-12. A state endangered species is “any species or subspecies of wildlife whose prospects of survival or recruitment within Indiana are in jeopardy or are likely within the foreseeable future to become so.” Ind. Code § 14-22-34-1. The rationale included in the recommended endangered species designation in Indiana included strong language regarding the need for “extensive timber harvests of sufficient intensity... across the forested landscape in southcentral Indiana to create a large continuum of early successional forest habitats” to prevent extirpation of ruffed grouse. RGS/AWS support of the proposed listing was provided with the caveat that subsequent environmental reviews in areas where grouse may still persist should strongly favor active forest management, to facilitate recovery rather than hinder habitat creation. Our comments also implored IDNR to consult RGS/AWS staff on the development of a recovery plan to ensure that state endangered listing of this species would be followed up with significant and active science-based forest management.

14. Ruffed grouse are not the only species affected by this trend of declining forest management. Breeding bird survey data (Sauer et al. 2017) indicate 42% of bird species that breed in young forest and shrub habitats in Indiana have experienced significant, negative population trends from 1966-2015, while only 26% of these species have increased. King and Schlossberg (2014) reviewed the songbird conservation value of these young forest habitats in eastern North America, and indicated misunderstanding and public opposition to using active management to recreate the effects that natural disturbance formerly provided is the primary challenge to conserving these communities and maintaining biodiversity.

15. Young forest habitats also provide cover, browse, and forage for many other wildlife, including white-tailed deer and wild turkeys that are the most popular game species of interest to Indiana’s 867,000 sportsmen and sportswomen who spend \$924 million annually and support 14,058 jobs.

16. Wild turkeys, which are an important game species in Indiana, rely on young forests and other early successional habitats to meet their breeding season habitat requirements. These habitat types provide important cover for nesting females and support abundant insect populations that make up a large proportion of a wild turkey's diet during the breeding season. However, throughout the Midwest and across much of the eastern wild turkey range (including Indiana), state agencies are documenting declines in population estimates and subsequently hunter harvest (Casalena et al. 2016, Byrne et al. 2016, Eriksen et al. 2016, Parent et al. 2016).

17. There are a multitude of factors thought to be influencing these population declines, however, vital rates such as nest success, poult survival and female survival during the breeding season are highly influential to the population dynamics for this species (Nguyen et al. 2003, Townsend et al. 2008). Indiana has experienced poor brood production in recent years (e.g., since 2005) (Bucks 2018), and efforts aimed at creating young forests and early successional habitats and promote healthy oak and hickory forests through the use of prescribed fire, timber harvest, and others outlined by this Project, are likely to improve production and positively influence local populations.

18. Currently, 12 of the 13 species of bats documented in Indiana are listed by the U.S. Fish and Wildlife Service and or the IDNR as either special concern, threatened, or endangered. Forests provide important habitat for these species for roosting, foraging, and meeting additional annual requirements. Forests with greater diversity in species composition as well as diversity in age and structure (e.g., understory, sub-canopy, canopy, and forest openings) improve foraging opportunities for these insectivorous bat species (Bucks and Johnson 2017).

19. The management techniques outlined in the Project will promote greater forest diversity and improve the forest age structure on this unit, improving habitat for these important species of concern.

20. Forested openings created through periodic disturbance either human-induced or naturally are critically important for a myriad of wildlife species. These openings often consist of early successional herbaceous vegetation that provides unique cover and foraging habitats for

wildlife while improving the overall biodiversity of the forest (Askins 2000, 2001). The herbaceous vegetation found in these openings often consist of native grasses and wildflowers that promote wildlife use, especially by insects and more broadly, pollinator species. In order to support desirable conditions for pollinator species, these openings must be maintained through periodic disturbance through the use of manual, mechanical, and or chemical treatment and prescribed fire (Bucks and Bledsoe 2011).

21. Timber harvest and the science-based management techniques outlined by the Project will greatly improve the diversity of the forest stands and the abundance and diversity of wildlife that rely on forested openings and varying age classes of forested habitat.

22. The Project would represent a modest step towards the large-scale forest conservation challenges Indiana faces; however, the northwest corner of Jackson County and the northeast corner of Lawrence County are centrally located to the last remnant of occupied ruffed grouse range. Furthermore, as the Forest Service has clearly explained, the Project would move the Forest toward its desired future condition as identified in the Forest Plan.

23. Both the Project and the Forest Plan were developed with appropriate and ample opportunities for public input and Service response. The Service has noted the young forest habitat creation under the Project would benefit ruffed grouse and American woodcock, which are both Regional Forester Sensitive Species, numerous songbird species, and a wide variety of other wildlife. This high quality habitat would be generated through removal of non-native pine plantations that provide poor quality wildlife habitat and less biodiversity than native forests.

24. The Project would also apply appropriate harvest levels and reintroduce fire to maintain hickories and the chestnut oak, white oak, and black oak that provide valuable hard mast sources for many wildlife. Without such silvicultural and regeneration treatments, these even-aged, mature oak stands will die off, and oak reproduction will be suppressed by shade-tolerant maple and beech of lesser wildlife value. FIA mortality data already shows a major die off the last several years in black and chestnut oak especially. This phenomenon is of concern

throughout the region, but the Forest Service is to be commended for applying scientifically sound management techniques to avoid the trend on the Project area.

25. Finally, poorly maintained roads in the Project area would contribute to sediment deposition into area streams and lakes and could disrupt recreational access to the Hoosier National Forest. Repairing and relocating roads while applying best management practices to reduce temporary construction-related erosion will provide better low-impact access.

26. Overall, the Project represents an important, appropriately planned and considered approach to restoration and long-term sustainability of habitat and infrastructure in an ecologically important area of the Hoosier National Forest. Our organizations and members enthusiastically support the Project.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 22, 2020, in Mason, Michigan.


BRENT A. RUDOLPH, PH.D.

References

Askins, R. A. 2000. Restoring North America's birds: lessons from landscape ecology. Yale University, New Haven, CT, 320pp.

Askins, R. A. 2001. Sustaining biological diversity in early successional communities: the challenge of managing unpopular habitats. Wildlife Society Bulletin 29:407-412.

Backs, S. E. 2008 (compiler). The Conservation of Ruffed Grouse in Indiana: Summary Report of Grouse Summit Meetings–2008, Indiana Department of Natural Resources, Indianapolis, IN.

- Backs, S. E. 2018. Wild Turkey Summer Brood Production Indices – 2018. Management and Research Note #1987. Indiana Division of Fish and Wildlife, Indianapolis, Indiana.
- Backs, S. E. and L. W. Bledsoe. 2011. Invertebrate abundance and vegetative structure of forest openings. National Wild Turkey Symposium Proceedings 10:51-63.
- Backs, S. E. and J. S. Castrale. 2010. The distribution and conservation status of ruffed grouse in Indiana: 25 years of decline. Proceedings of the Indiana Academy of Science 119:101–104.
- Backs, S. E., and S. Johnson. 2017. Increasing wildlife habitat diversity on forested lands managed by the Indiana Department of Natural Resources, Indiana Department of Natural Resources, Indianapolis, IN.
- Byrne, M. E., M. J. Chamberlain, and B. A. Collier. 2016. Potential density dependence in wild turkeys productivity in the southeastern United States. Proceedings of the National Wild Turkey Symposium 11:329-351.
- Caselena, M. J., M. V. Schiavone, A. C. Bowling, I. D. Gregg, and J. Brown. 2016. Understanding the new normal: wild turkeys in a changing northeastern landscape. Proceedings of the National Wild Turkey Symposium 11:45-57.
- Dessecker, D. R. and D. G. McAuley. 2001. Importance of early successional habitat to ruffed grouse and American woodcock. Wildlife Society Bulletin 29:456-465.
- Dessecker, D. R., G. W. Norman, and S. J. Williamson, eds. 2007. Ruffed Grouse Conservation Plan Executive Report. AFWA Resident Game Bird Working Group.
- Eriksen, R. E., T. W. Hughes, T. A. Brown, M. D. Akridge, K. B. Scott, and C. S. Penner. 2016. Status and distribution of wild turkeys in the United States: 2014 status. Proceedings of the National Wild Turkey Symposium 11:7-18.
- Flather, C. H., M. S. Knowles, and J. McNees. 2008. Geographic patterns of at-risk species: a technical document supporting the USDA Forest Service Interim update of the 2000 RPA Assessment. Gen Tech. Rep. RMRS-GTR-211. U.S. Dep. Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO.
- Gormanson, D. D. and J. Gallion. 2016. Indiana’s oaks and hickories: here today. What about tomorrow? Technical presentation March 1, 2016 at Four Winds Resort and Marian, Bloomington, Indiana. “Indiana Species on the Edge: Managements Issues and Implications Conference jointly sponsored by the Indiana chapters of The Wildlife Society, American Fisheries Society, and the Society of American Foresters.
- Hunter, W. C., D. A. Buehler, R. A. Canterbury, J. L. Confer, and P. B. Hamel. 2001. Conservation of disturbance-dependent birds in eastern North America. Wildlife Society Bulletin 29:440-455.

- King, D. I., and S. Schlossberg. 2014. Synthesis of the conservation value of the early-successional stage in forests of eastern North America. *Forest Ecology and Management*. 324:186–195.
- McShea, W. J., W. M. Healy, P. Devers, F. H. Koch, D. Stauffer, and J. Waldon. 2007. Forestry matters: decline of oaks will impact wildlife in hardwood forests. *Journal of Wildlife Management* 71:1717-1728.
- McShea, W. J., W. M. Healy, and P. Van Deusen. 2016. Trends in mast availability for wild turkeys in eastern forests. *Proceedings of the National Wild Turkey Symposium* 11:61-78.
- Nguyen, L. P., J. Hamr, and G. H. Parker. 2003. Survival and reproduction of wild turkey hens in central Ontario. *Wilson Bulletin* 115:131-139.
- Niemi, G. J., R. W. Howe, B. R. Sturtevant, L. R. Parker, A.R. Grinde, N. P. Danz, M. D. Nelson, E. J. Zlonis, N. G. Walton, E. E. Gnass Giese; S. M. Lietz. 2016. Analysis of long-term forest bird monitoring data from national forests of the western Great Lakes Region. Gen. Tech. Rep. NRS-159. Newtown Square, PA: U.S., Department of Agriculture, Forest Service, Northern Research Station.
- Parker, G. R. 1997. The wave of settlement. Pp. 369-381 *in* M.T. Jackson (ed.) *The Natural Heritage of Indiana*. Indiana University Press, Bloomington, IN.
- Parent, C. J., B. S. Stevens, A. C. Bowling, and W. F. Porter. 2016. Wild turkey harvest trends across the Midwest in the 21st century. *Proceedings of the National Wild turkey symposium* 11:211-223.
- Porter, W. F., W. M. Healy, S. E. Backs, B. F. Wakeling, and D. E. Steffen. 2011. Managing wild turkeys in the face of uncertainty. *National Wild Turkey Symposium Proceedings* 10: 1-12.
- Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. *The North American Breeding Bird Survey, Results and Analysis 1966 - 2015*. Version 2.07.2017 USGS Patuxent Wildlife Research Center, Laurel, MD.
- Schmidt, T. L., M. H. Hansen, and J. A. Solomakos. 2000. *Indiana's forests in 1998*. U.S. Forest Service, North Central Research Station, Resource Bulletin NC-196. 139pp.
- Townsend, C. R., M. Begon, and J. L. Harper. 2008. *Essentials of ecology*, third edition. Blackwell, Oxford, United Kingdom.