

**Why Indiana Needs Wild Areas in Our State Forests; A Position Statement from the Indiana Forest Alliance Supporting a State Wild Areas Act**

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**Introduction** – The Indiana Forest Alliance (IFA) is supporting legislation, SB 548 and HB 1580, that will set aside from logging 36,820 acres of the most intact and wild portions of our state forests in **13 State Wild Areas**. These Wild Areas would be managed for wilderness recreation and the maintenance of old forest habitat. This is not a radical proposal nor without ample precedent. The acreage of these proposed State Wild Areas comprises 23.6 percent of the state forests, leaving more than three-fourths of the state forests still open to logging.

We believe these State Wild Areas will address the high demand in Indiana for more opportunities for the public to connect with wild nature that are not being provided by the IDNR and that are important to the quality of life in our state. State Wild Areas will also allow more of our native forest ecosystem to be restored, providing interior forest habitat that is limited and important to many species of native wildlife declining in the state. We believe that our natural resource agencies should be doing everything they can to conserve such habitat on Indiana’s public lands before the plight of these species creates more pressure to regulate private land owners.

### **1) Hoosiers Need These State Wild Areas:**

Indiana is 38<sup>th</sup> in physical size among states but 15<sup>th</sup> in population, making the Hoosier state more densely populated than most states. According to the latest US Census Data, more than two million people live within 20 miles of our state forests and more than 14.5 million people live within 100 miles of our state forests.

While Indiana has great natural beauty, the amount of natural land available to the public for outdoor recreation is very limited. Unfortunately for that part of our economy that depends on tourism as well as for our own quality of life, millions of Hoosiers and neighboring Midwesterners must drive increasingly farther from their homes just to find a sizeable piece of nature that they can enjoy. Even when we do drive considerable distances, it is increasingly difficult to find much solitude in that nature because so many other Midwesterners are also seeking it out in the same place. Furthermore when Hoosiers drive to our state forests today, unlike the pervasive deep forests they enjoyed 10 years ago, much of the forest they encounter has just been logged and other areas are off limits to ongoing logging.

There is a growing body of science that documents the need that humans have to connect with wild nature. According to a [Vogue Magazine](#) article, studies by the Japanese Forestry Agency starting in the 1980s found that the sensory attraction and soothing feelings that Japanese experience walking on forest trails “quantifiably relieve symptoms of stress” as measured by “blood pressure, pulse, cortisol levels and other markers of mental health” and “bolster the immune system”.<sup>1</sup> Studies in the US, Sweden, Canada, England, and Australia have since

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<sup>1</sup> “Natural High”. [VOGUE](#). December, 2014. pp. 302-303.

produced similar results. In September, 2014, a meta-analysis of 21 studies and more than 8,500 subjects found decisively that connection to nature “significantly predicts happiness.”<sup>2</sup>

Wild nature is not something we can construct or build. It is part of our legacy as Hoosiers, part of what shaped our character, and experiencing wild nature is basic to our quality of life, not some exotic pastime needed only by Americans far away. Indiana’s current State Comprehensive Outdoor Recreation Plan (SCORP) states:

Natural resource-based recreation of many kinds is still a major need among Hoosiers.

- “Non-consumptive” natural resource-based recreation is a strongly growing area of use that includes activities such as bird watching, nature photography, and observation, camping, swimming, and more. The majority of “favorite” outdoor recreation activities from the participation survey were non-consumptive (4 out of 5).<sup>3</sup>

The SCORP also discusses research in the book, *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder* (Richard Louv, Algonquin Books, 2008) that states that increased asthma, attention deficit disorders, obesity, and depression in our children are linked to their lack of connection to nature.<sup>4</sup> We ought not to leave them a world so devoid of wild nature that they will have to travel hundreds of miles beyond our state’s borders to find it.

Another change occurring in Indiana discussed in the SCORP is the epidemic of obesity in our state.<sup>5</sup> According to a very large public health survey in 2009 by the US Center for Disease Control (CDC), nearly one-third (29.9 percent) of Hoosiers are obese, making Indiana one of the most overweight states in the nation. The CDC says that obesity occurs when people eat too much food and get too little physical activity.

Management that maintains and promotes the natural beauty of Indiana’s public lands can make Hoosiers more physically active because they are more likely to engage in outdoor recreation on those lands. A comprehensive national survey of outdoor recreation in 2011 classifies dispersed recreation activities such as hiking, camping and fishing as “gateway” activities good for public health because they have a contagious effect on their participants, i.e. Americans who hike, camp and fish become more likely to engage in other physical activities.<sup>6</sup> That survey found that Americans engage in outdoor activities to get exercise (68 percent of respondents), be close to nature (46 percent), observe scenic beauty (45 percent), enjoy sounds and smells of nature (43 percent), and experience solitude (21 percent).<sup>7</sup> The survey also concluded, “Getting youth active in the outdoors at a young age is critical to their wellbeing.”<sup>8</sup>

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<sup>2</sup> *Ibid.*

<sup>3</sup> IDNR Division of Outdoor Recreation, *Indiana Statewide Outdoor Recreation Plan 2011-2015, Hoosiers Planning Play*. January 2012, p. 40.

<sup>4</sup> *Ibid.*, p. 13-14.

<sup>5</sup> *Ibid.*, p 14.

<sup>6</sup> The Outdoor Foundation. *2012 Outdoor Recreation Participation Report*. 4909 Pearl East Circle, Suite 200, Boulder, CO 80301. phone: 303-444-3353. pp. 23-24/62.

<sup>7</sup> *Ibid.*, p. 30/62.

<sup>8</sup> *Ibid.*, p. 42/62.

Hoosiers ranked hiking as one of their most favorite forms of outdoor recreation in four of the last five outdoor participation surveys in the SCORPs.<sup>9</sup> The latest SCORP discusses a great jump in the development of trails in Indiana since 2006 and the sizeable financial commitment of the Daniels administration in its “Hoosiers on the Move Plan” of 2006 to facilitate that program.<sup>10</sup> Two different surveys discussed in this SCORP said that a primary reason that Hoosiers did *not* use trails was: “structural barriers-poor setting/physical environment, lack of facilities or programs, time, money, transportation, safety, etc.” In addition to closing many trails, logging in the state forests is turning beautiful areas of wild nature that bring Hoosiers to these trails into aesthetically unattractive sites that depress users when the trails are re-opened and discourage return visits to the state forests.

There are numerous studies documenting public attitudes that are averse to logging public forests, but this particular concern is borne out in a recent study that is part of the Hardwood Ecosystem Experiment (HEE) being carried out by Purdue University’s Department of Forestry and Natural Resources and the IDNR’s Division of Forestry (DOF) with participation also by several other colleges and universities. The HEE is looking at both the short and long-term impacts of different forms of silviculture in the Morgan-Monroe State Forest as well as public perceptions towards the silviculture. A 2007 HEE study surveyed recreationists (users of the Morgan-Monroe State Forest) and nearby landowners about their attitudes towards logging in the state forest before and after they were given information explaining the purpose and benefits of the silvicultural treatments (clearcutting, shelterwood, and group tree selection).<sup>11</sup> Even after virtues of the logging were explained, while this information increased the acceptability of some of the treatments, the majority of 1,404 respondents still chose no harvest as their preferred management when compared to any of the silvicultural treatments. This was true for both the recreationists and the nearby landowners. *According to the responses, the respondents were most likely to return to the state forest if it remained in the condition with highest stand density which is the most natural, “no harvest” condition.*<sup>12</sup>

Clearly, enjoying wild nature is important to the health and wellbeing of Hoosiers. Establishing State Wild Areas in our state forests will conserve opportunities for wilderness recreation that are increasingly rare and will be even more precious to future generations in Indiana. These opportunities are not provided by our state parks or nature preserves.

## **2) *There is Not Enough Land Set Aside for the Public Enjoyment of Wild Nature or Forest Dependent Wildlife in Indiana.***

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<sup>9</sup> IDNR Division of Outdoor Recreation, *Indiana Statewide Outdoor Recreation Plan 2011-2015, Hoosiers Planning Play*, January 2012. p. 38.

<sup>10</sup> *Ibid.*, pp. 79-85.

<sup>11</sup> Rogers, S.C., Hoover, W.L. & Allred, S.B. “Public Acceptability of Forest Management Practices at Morgan-Monroe State Forest”. Department of Forestry and Natural Resources, Purdue University, 715 West Lafayette, IN 47907, HEE Contact: Andy Meier, [meiera@purdue.edu](mailto:meiera@purdue.edu), 765-494-1472.

<sup>12</sup> *Ibid.* pp 268-271.

While our state parks and state nature preserves are off limits to logging or other developments that will harm their natural character, their total combined area is exceedingly small relative to our state's population and simply not adequate to ensure the survival of declining forest-dependent wildlife in Indiana. The state parks and state nature preserves collectively comprise 101,992 acres,<sup>13</sup> less than one half of one percent Indiana's total acreage (23.3 million acres). In fact all of the state and federal land in Indiana set aside from logging or vegetative manipulation for ecological protection and the public enjoyment of nature amounts to only 221,000 acres.<sup>14</sup> This is less than one percent of Indiana and amounts to slightly more than just three-hundredths of an acre per Hoosier.

We rightly expect our fellow Hoosiers to enjoy nature on their own land or on public land rather than trespass on others' private land, but we are not providing the public land to accommodate this demand. There are a few regions such as in the south central part of the state with appreciable amounts of public land. But the fact is if one totaled all of the public land in Indiana without regard to how it is managed, i.e., all city, county, state and federal park and conservation land, it only equals 5.36 percent of the state's area in acreage.<sup>15</sup> This is one-fifth of an acre per Hoosier, far below the per capita amount of conservation land available to Americans in many other states.

Furthermore, Indiana's state parks and nature preserves are not established to provide opportunities for wilderness recreation. To begin with, state parks contain extensive human infrastructure. This includes many miles of paved and gravel roads, parking lots, visitor centers, developed playgrounds, sport fields, tennis courts, picnic areas, developed campgrounds, golf courses, swimming pools, lodges, amphitheaters, manmade lakes, beaches, etc. In the portions of state parks left to nature, hikers are not permitted to explore off trail. Many areas in state parks are designated as nature preserves and entirely off limits to the public. There are no backpacking trails developed and not enough room for long distance hiking trails. There is no camping allowed in undesignated campsites. Those seeking to primitive camp, i.e., camp at a designated site in "back country" beyond a developed campground, will find that only two state parks, Shades and Chain of Lakes, allow this kind of camping. Other activities such as hunting

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<sup>13</sup> The current acreage of state parks is 69,528 as confirmed by phone and email with Terry Coleman, Deputy Director of Operations, Div. of State Parks, on 12/30/2014, phone 317-232-4131. The current acreage of dedicated nature preserves outside of the state parks is 32,464 as provided by John Bacone, Director of Div. of Nature Preserves, 317-232-4054, 12/30/2014.

<sup>14</sup> This is composed of approximately of 104,000 acres of the Hoosier National Forest, 14,000 acres in the Indiana Dunes National Lakeshore, 102,000 acres in state parks and nature preserves and 1,000 acres of recreation areas in the State Forests. The HNF acres off limits to logging are in Management Areas 2.4, 5.1, 6.2, 6.4, 7.1, 8.1, & 8.2, with exceptions for wildlife openings and some vegetative management in Management Areas 2.4 and 6.4. (see *Final Environmental Impact Statement, 2006 Hoosier National Forest Land and Resource Management Plan*, Chapter 2 – Management Alternatives, pp. 2-26, 2-35, & Table 2.1 which indicate that these Management Areas comprise 48% of the HNF total acreage as of 2006. The proportion of approximately 51% of HNF acreage off limits to logging was provided as an updated figure by Judi Perez, Planning and Public Affairs Staff Officer, USDA Forest Service, Bedford, IN, phone: 812-276-4770, on Jan. 20, 2015.

<sup>15</sup> IDNR Division of Outdoor Recreation, *Indiana Statewide Outdoor Recreation Plan 2011-2015, Hoosiers Planning Play*. January 2012. p. 40. Some 1,248,882 acres are owned by local, state or federal agencies out of 23,307,520 acres in the state.

or mushroom picking are not allowed at all. Outside of some hiking on short trails, nature preserves do not permit any of this dispersed recreation.

Scientists who have studied Indiana's forest community for many decades also assert that the amount of land in our state parks and nature preserves is too deficient to maintain the long-term health or natural diversity of our native forest ecosystem. Two of America's most published scientists on the subjects of eastern forest ecology and the flora and fauna of eastern hardwood forests, Dr. Marion Jackson and Dr. John Whitaker, both recently retired from Indiana State University, summarized this deficiency as follows:

Rather than a static, shaded condition, old growth forest is ever evolving and contains a continuum of successional habitats, including early vegetation in canopy openings and disruptions caused by forest diseases and insects, storm blow downs, fires and other disturbances within deep forest interiors spread over vast areas. The inherent nature of this natural diversity is found in larger blocks of unmanaged forest. Conserving such diversity in the highly fragmented private woods that comprise four fifths of our state's forestland is not a practical option. Furthermore, our forest ecosystem cannot survive in a healthy condition if only separated fragments of old growth forest are allowed to exist in the third of one percent of Indiana in nature preserves and state parks. In Indiana, the state forests and the Hoosier National Forest offer virtually the only publicly owned forest acreages large enough to conserve this natural diversity on a viable scale.<sup>16</sup>

### **3) *Historically, the State Forests Were Managed to Provide Wilderness Recreation Opportunities That Current Management is Eliminating.***

Our state forests, not the state parks, are the state properties that have been managed to provide opportunities for wilderness recreation and solitude. Historically, state forest managers set aside much more acreage from logging for dispersed recreation and ecological protection than current state forest managers are reserving from logging today. In fact, the acreage proposed for State Wild Areas in SB 548 and HB 1580 will reserve significantly less land from logging in the state forests than managers had set aside 11 years ago. Up through 2004, IDNR's Division of Forestry (DOF) had set aside 40 percent of the state forests, reserving some 60,000 acres from logging to avoid severe topography, preserve natural areas and other environmentally sensitive areas, and meet wildlife needs.<sup>17</sup>

An examination of the 114 year history of our state forests reveals many examples in which nonlogging policies have been pursued in Indiana's state forests, whether for managerial,

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<sup>16</sup> Jackson, M.T. & Whitaker, J.O., *Interior Forests in Indiana*, in the IFA Newsletter, The Forest Defender, Winter 2013-2014, p. 5.

<sup>17</sup> In a letter dated February 1, 2002 from IDNR to IFA President, David Haberman, IDNR Director John Goss stated that 40% of all state forest acreage (150,000 acres) were reserved from the harvesting program due to these considerations. IFA will provide this letter upon request.

recreational, or ecological purposes. These have included areas for buildings, parking lots, campgrounds, picnic areas, areas under water, steep slopes and immediate slopes around lakes. They have included many historic and archaeological sites, nearly 4,000 acres in three Recreation Areas in Clark, Jackson-Washington, and Harrison-Crawford State Forests, sink holes and areas around cave entrances. They included some 5,741 acres of “Old Forest Areas” in seven state forests where no logging was allowed and nature was to take its course.<sup>18</sup> They included the large preponderance of the 7,200 acres in three Back Country Areas established by Republican Governors Otis Bowen and Robert Orr in the 1970s and 80s.

In establishing the last of these Back Country Areas in Morgan-Monroe State Forest, IDNR Director Jim Ridenour stated this area was “to be enjoyed by the wilderness seeker as a place of solitude and repose” and that he planned to establish more Back Country Areas to meet the “rising demands of Hoosiers for wilderness recreation.”<sup>19</sup> Jim is a life-long Republican and perhaps our state’s most noted conservationist on the national level, having directed the National Park Service under President George HW Bush from 1988-1992. Recently he has called again for setting aside more areas in our state forests for wilderness recreation.<sup>20</sup>

The DOF also established the Knobstone, Tecumseh, and Adventure Hiking Trails, Indiana’s three premier backpacking trails which traversed these Back Country Areas, Old Forest Areas and other remote parts of the state forests.

Unfortunately, under a new state forester appointed in 2005, the DOF has reduced state forest acreage set aside from logging by nearly 90 percent to an estimated 7,000-8,000 acres today, a mere five percent of state forest acres.<sup>21</sup> All Old Forest Areas have been eliminated. Instead of maintaining their wilderness character, multiple timber sales and the corresponding road construction are being conducted in the Back Country Areas. Logging is occurring over extremely steep slopes and sink holes.<sup>22</sup> The Knobstone, Tecumseh and Adventure Hiking Trails have been closed for logging in multiple places, usually temporarily for up to two year periods

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<sup>18</sup> IDNR, *The Division of Forestry, Our First 100 Years, 1901-2001*, Division of Forestry, 2006, page 81. The specific locations of these tracts was provided to IFA in a September 8, 2014 Letter from John Friedrich, DOF Property Specialist which IFA will provide upon request.

<sup>19</sup> OUTDOOR INDIANA, December 1981-January 1982, p. 6.

<sup>20</sup> See “Cutting timber in state forests makes sense at times”, Jim Ridenour, LTE, INDIANAPOLIS STAR, Sept. 5, 2014.

<sup>21</sup> IDNR, Division of Forestry. *INDIANA STATE FORESTS ENVIRONMENTAL ASSESSMENT 2008-2027 Increased Emphasis on Management & Sustainability of Oak Hickory Communities On the Indiana State Forest System*, Dec. 2008. Pages 107 & 108 indicate there are 3,560 acres of lakes and developed recreation areas where limited or no timber harvesting is allowed. In addition, John Friedrich, DOF Property Specialist stated there are no documents providing total acreage in the state forest timber base but indicated that the only areas in the state forests currently not subject to commercial timber harvest are nature preserves, lakes and developed recreation areas (Jan. 9, 2014 phone conversation, 317-234-5210). Adding state forest nature preserve acreage (2,658 acres, provided by John Bacone, Director, Div. of Nature Preserves, Aug. 2014, 317-232-4054) to the acreage of lakes and developed recreation areas equals 6,218 acres with additional acreage assumed for roadways, buildings and parking lots.

<sup>22</sup> IFA will provide its written comments on at least 10 major timber harvest proposed in the last two years in Back Country Areas, on very steep slopes and/or over sinkholes in the state forests and the published dates, compartments and tract numbers for those harvests upon request.

but in some places rerouted entirely with the trails being shortened.<sup>23</sup> Rather than any semblance of balanced multiple use management, all public uses of our state forests have been subjugated to the sale of wood to private industry at levels that are at least four times greater than what was sold previously from these forests (and often substantially more than four times previous levels).<sup>24</sup>

#### **4) Establishing State Wild Areas Will Not Hurt Indiana's Timber Industry.**

Indiana's state forests comprise three percent of the forests in the state.<sup>25</sup> Data from the 2013 and 2014 Consulting Foresters Stumpage Timber Price Reports in the Indiana Woodland Steward, newsletter of the Indiana Forest and Woodland Owners Association, indicates that state forests are providing only 4.9 to 7.5 percent of the timber purchased by Indiana saw mills each year.

Specifically, according to the 2013 Stumpage Report, a total of 28,650,085 board feet was reported sold in Indiana during a reporting period of the spring of 2012 through the spring of 2013. The report stated, "The data represents approximately 10 to 15 percent of the total volume of stumpage purchased during the periods from April 16, 2012 through April 15, 2013." If the reported volume was just 10 percent of the total volume of timber purchased during that period, then the total volume of timber purchased in Indiana would have been approximately 286,500,850 board feet. This number is virtually identical to the volume reported the previous year. During each of the past three years, the DOF has sold approximately 14,000,000 board feet from the state forests, 4.9 percent of this volume.

If the volume reported represented 15 percent of all stumpage purchased during the reporting period, then the total volume of all standing timber sold in Indiana during that year was only 191,000,567 board feet of which 7.3 percent was comprised of the state forest timber sold (14,000,000 board feet).

Longtime Purdue forest economist, Bill Hoover, confirmed to IFA in 2013 that it is reasonable to project those total volume numbers based on the 10-15 percent reporting figure in these Stumpage Reports. In the 2014 Stumpage Report, the proportion of timber sold to Indiana mills from the state forest rose slightly to a range of 5.2 to 7.5 percent.

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<sup>23</sup> For example, see <http://www.in.gov/dnr/outdoor/4224.htm> for announcements of re-route and closure of three sections of the Knobstone Trail in December 2014.

<sup>24</sup> IDNR, Division of Forestry. *INDIANA STATE FORESTS ENVIRONMENTAL ASSESSMENT 2008-2027 Increased Emphasis on Management & Sustainability of Oak Hickory Communities On the Indiana State Forest System*. Dec. 2008. See pp. 14-17 and 111-112 which explain the increase in harvesting called for selling up to 14 million board feet per year generating \$3.6 million in total annual revenue from 8,000 acres of state forest to be logged per year from 2008 to 2027. Actual state forest logging volumes have been at 14 million board feet per year for the past three years. This compares to 3.4 million board feet sold in 2003-2004, that generated \$897,313 in total annual revenue from logging 2,500 acres of state forest per year and less board feet sold in previous years with an average annual revenue from the sale of state forest timber from 1994 through 2004 that was \$736,372.

<sup>25</sup> IDNR, Division of Forestry, *INDIANA STATE FORESTS ENVIRONMENTAL ASSESSMENT 2008-2027 Increased Emphasis on Management & Sustainability of Oak Hickory Communities On the Indiana State Forest System*, Dec. 2008, p. 6.

It should also be noted that state forest timber is being sold at prices substantially below private timber prices. DOF data indicates that the average price for state forest timber sold in Fiscal Year 2014 was \$264 per thousand board feet. This is higher than the average price for low quality private timber sold in that year of \$238 per thousand board feet but well below the average price paid for average quality private timber of \$377 per thousand board feet and not even half the price paid for high quality private timber which averaged \$591 per thousand board feet. Although IFA lacks Fiscal Year 2013 data, the average price for state forest timber for the previous four Fiscal Years (2009-2012) was \$203 per thousand board feet. This is below the average price paid during that four year period for low quality private timber of \$228 per thousand board feet, well below the average price paid in that period for average quality timber of \$345 per thousand board feet and far below the average price paid in that period for high quality timber of \$566 per thousand board feet.<sup>26</sup> These substantively lower prices do not suggest a high demand for state forest wood.

Given that Indiana's timber industry was successfully operating when 40 percent of the state forests were off limits to logging before 2004, setting aside 23.6 percent of state forests from logging for recreation today should also have a negligible effect on the industry.

**5) *Recreation Can Bring in More Dollars to Local Communities From State Forests Than Logging Them.***

The creation of State Wild Areas in the state forests could bring much needed tourism to southern Indiana's rural communities. US Forest Service budget data indicates that recreation supports nearly five times as many jobs in communities surrounding our national forests as logging. Specifically,

Recreation, hunting, fishing, and wildlife viewing activities together account for more jobs than any other activity on the National Forest System. The associated visitor spending supports local businesses that provide guides, outfitting, transportation, food and lodging, and other services. Outdoor recreation on the National Forest System supports about 205,000 jobs, contributing about \$13.6 billion to the Nation's gross domestic product each year.<sup>27</sup>

In comparison, the generation of forest products from the National Forest System is supporting 42,000 jobs and contributing \$3 billion annually to America's gross domestic product.<sup>28</sup> The rarity of wild, natural land in Indiana for recreation suggests that Indiana could reap similar benefits in job creation and tourism if State Wild Areas were established and promoted in our state forests.

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<sup>26</sup> Private timber prices are from the Indiana Consulting Foresters Stumpage Timber Price Reports for the years in question. State forest timber prices are provided by the IDNR Division of Forestry.

<sup>27</sup> United States Department of Agriculture, Forest Service, "Fiscal Year 2014 Budget Overview", April 2013, p.5.

<sup>28</sup> *Ibid.*

Although 15 percent of the revenues from state forest timber sales go to the counties where those sales occur, we question whether those revenues cover even a fraction of the costs to address serious wear and tear on county roads and bridges from traffic of trucks and heavy equipment resulting from the timber harvests.

There are substantial costs from state forest timber sales such as these costs to local roads and bridges, timber stand improvement in harvest areas, control of invasive plants, and other costs that the DOF does not appear to be accounting for when it cites the lost value of timber from setting aside any area of state forest. The DOF does not provide a cost benefit analysis to examine whether the benefits of its timber sales actually exceed their costs to the state or to the counties. A complete and transparent analysis of the costs and benefits from state forest logging, and other activities in state forests, including recreation, would help decision-makers chart management strategies that are the most cost effective for Hoosiers, the owners of these public forests. This analysis should address the value of ecosystem services and habitats provided by old forests which are not abundant in Indiana.

While recreation does not generate revenues from the sale of timber, just as state park visitors pay gate fees, there are methods such as permit and user fees that should be explored for generating revenue from camping, hiking, backpacking and other dispersed recreation in state forests. Much of the costs from timber sales would be avoided in state forest lands set aside from logging, and much of the costs for maintaining state park infrastructure would be absent in the recreational use of State Wild Areas.

**6) *Increased State Forest Logging is Harming Forest-Dependent Wildlife That is Already Declining, Rare or Endangered in Indiana.***

The DOF's current management of our state forests is diminishing the limited habitat for many forest dependent species that are declining or endangered in Indiana. In the process, the DOF is providing more habitat for the White-tailed Deer, Raccoon, Brown-headed Cowbird, Common Grackle, Goldfinch, Mockingbird, House Wren, English Sparrow, Starling, and other native and nonnative wildlife that is abundant outside the state forests in edge habitats and does not need the taxpayer's help. These concerns have been presented repeatedly by scientists who are the top biologists in their fields.

The IDNR has raised substantive concerns about the Ruffed Grouse's decline in Indiana. Game biologists assert that a reduction in early successional habitat and edge from less clearcutting is responsible for this decline and the IDNR infers that the establishment of State Wild Areas would only worsen its decline.

However in the last 10 years, there has been a large increase in edge and early successional habitat created in the state forests by hundreds of new group tree selection openings of up to 10 acres (as classified by the Division of Forestry) and clearcuts greater than 10 acres which have increased since the current Strategic Plan for the state forests was put in place.<sup>29</sup> This

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<sup>29</sup> IDNR, Division of Forestry, *INDIANA STATE FORESTS ENVIRONMENTAL ASSESSMENT 2008-2027 Increased Emphasis on Management & Sustainability of Oak Hickory Communities On the Indiana State Forest System*, Dec.

large increase in the generation of early successional habitat and edge on the state forests and continued clearcutting in parts of the HNF appears to have had little positive impact on the decline of the grouse.

The following insight from Professors Whitaker and Jackson in The Forest Defender is also relevant: *“While some species that are disappearing, such as the ruffed grouse, may benefit from creating more edge, the explosion of other species, such as the white-tailed deer, which prefer edge habitats, suggests that the ruffed grouse’s decline in Indiana may not be due to the absence of edge and browse created by logging Indiana’s limited public forests [emphasis added].”*<sup>30</sup> In *Birds of the Eastern Forest*, well known ornithologist, John Livingston states,

The ruffed grouse is found from the Yukon to Labrador and southward, in suitable habitat. It is subject to more or less regular cycles in abundance; populations will build to a peak over a period of years, drop off dramatically, and then slowly start building up again. The nature of this periodicity has yet to be completely understood.<sup>31</sup>

It should also be noted that IDNR manages 16 State Fish and Wildlife Areas comprising 165,000 to 170,000 acres in Indiana, more acreage than in our state forests (156,000 acres) and more than twice the acreage in our state parks (70,000 acres). Intensive vegetative manipulation and maintenance of edge habitat is undertaken on these lands by the IDNR Division of Fish and Wildlife to maximize hunting habitat. Yet there is no program underway to address the decline of ruffed grouse in any of Indiana’s Fish and Wildlife Areas.<sup>32</sup>

Regardless of the reasons for the Ruffed Grouse’s decline in Indiana, given the well documented detrimental impacts of clearcutting to so many native forest wildlife species, we do not favor a policy of consigning our state forests to clearcutting for the benefit of a game bird that appears to be at the southern limit of its natural range in Indiana<sup>33</sup> and is not threatened or endangered in much of North America. Furthermore, the reality is that the Wild Areas legislation will leave more than three fourths of state forest land open to vegetative manipulation including clearcutting for the benefit of the Ruffed Grouse or other game species.

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2008, See pp. 14 through 17. “This proposed action includes a greater number of harvest openings, increased recruitment efforts for oak and hickory and better opportunity to establish new stands of shade intolerant and mid-tolerant species than previous management levels.” The increase in cutting includes 1,400 acres per year of group tree selection openings, 800 acres per year of hardwood forest clearcuts, 75 acres per year of pine clearcuts, and 650 acres per year of shelterwood cuts (which produce clear cut openings after final removal of over story trees).

<sup>30</sup> Jackson, M.T. & Whitaker, J.O., *Interior Forests in Indiana, The Forest Defender, Winter 2013-2014*, page 5.

<sup>31</sup> Livingston, J.A., *Birds of the Eastern Forest: I*, Copyright © 1968, M.F. Feheley Arts Company Limited, Reprinted 1977. p. 74.

<sup>32</sup> Phone communications with James Kershaw, Program Manager, IDNR Division of Fish & Wildlife, Dec. 30, 2014, (317-233-0647) and with IDNR Grouse Biologist, Steve Backs, Jan. 15, 2015, (812-849-4586).

<sup>33</sup> Phone communication with James Kershaw, Program Manager, IDNR Division of Fish & Wildlife, Dec. 30, 2014, (317-233-0647). This is also evident in the range maps in many standard bird guides, e.g., see Sprunt A. IV. & Zim, H.S., *GAMEBIRDS A GUIDE TO NORTH AMERICAN SPECIES AND THEIR HABITS*, Golden Press. and Robbins, C.S. , Bruun, B. & Zim H.S., *A GUIDE TO FIELD IDENTIFICATION; BIRDS OF NORTH AMERICA; EXPANDED, REVISED EDITION* Golden Press © 1983, 1966, Western Publishing Company, Inc.

The declines in suites of native forest-dependent species combined with the scarcity of public land on which habitat for such species can be assured in Indiana should make preservation of old forests and interior forest habitat the priority for our state's public land managers. The DOF acknowledged this priority stating, "the DOF must ensure the life requirements of Indiana's species of greatest conservation need, specifically species requiring late-successional communities and mature forest are addressed as well"<sup>34</sup> in an Environmental Assessment in 2008, which then authorized a large increase in logging that is substantially diminishing this habitat in the state forests.<sup>35</sup> Drs. Jackson and Whitaker summarize the plight of Indiana's native forest wildlife from the impact of this type of management:

Sadly, a brief glance at our state's list of endangered species reveals that many native wildlife species are struggling to maintain viable populations in Indiana today in significant part due to the scarcity of large mature hardwood forests, unfragmented by human activities. All but one of Indiana's 12 bat species are federally or state endangered, threatened, or a "species of special concern." A large number of native, neotropical, migrant songbirds are not successfully reproducing in Indiana's smaller woodlots and managed forests due to increased nest predation and parasitism from human-induced edge. Many salamanders require moist environments in predominantly closed canopy forests that are eliminated by active forest management activity. Many Indiana fish and mollusks need clean, clear water in streams with temperatures regulated by large mature forests.<sup>36</sup>

Concerns about the impacts of state forest logging on amphibians (frogs, toads, and salamanders) have also been voiced by the Chair of the IDNR's Nongame Technical Advisory Committee on Amphibian and Reptile Conservation, Dr. Robert Brodman of Saint Joseph's College in Rensselaer. America's eastern hardwood forests contain the greatest salamander diversity in the world. Salamanders in Indiana's woods breathe through their skin, not lungs and are adversely affected by changes in moisture in the forest floor that occur when the canopy is removed from logging. For those questioning their value, amphibians such as salamanders, are some of the greatest predators of mosquito larvae in existence. In an article in The Forest Defender, Dr. Brodman notes that south central Indiana has "most of our remaining forest" and states,

This area provides the best habitat for amphibians in the state. Habitat loss is the biggest cause for the decline of amphibians and other wildlife; it is well known that amphibians decline dramatically when forests are clear-cut. The question then is whether an alternative timber management to clear-cutting can be used to maintain and protect

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<sup>34</sup> IDNR, Division of Forestry. *INDIANA STATE FORESTS ENVIRONMENTAL ASSESSMENT 2008-2027 Increased Emphasis on Management & Sustainability of Oak Hickory Communities On the Indiana State Forest System*. Dec. 2008. p. 70.

<sup>35</sup> *Ibid.* See pp. 14-17 and 111-112.

<sup>36</sup> Jackson, M.T. & Whitaker, J.O., "Interior Forests in Indiana". The Forest Defender, Winter 2013-2014. page 5.

amphibian populations while harvesting timber resources, and further, whether substantive portions of our public forests, particularly the less developed areas of our state forests, should be spared from logging entirely to conserve amphibian populations which are declining dramatically on a world-wide scale.<sup>37</sup>

After reviewing the research on the impacts of logging on amphibians, Dr. Brodman concludes:

A meta-analysis of 24 studies in North America found that shelterwood harvesting was the only partial removal harvest method that resulted in smaller reductions in salamander populations than clear-cutting; no method of logging matched unharvested controls. Given these results from peer-reviewed research, substantive portions of the Indiana state forests should be spared from timber harvesting altogether in order to maintain healthy populations of amphibians on the state's public lands.<sup>38</sup>

Ornithologists have decried the increased predation and parasitism of nests of declining forest songbirds in southern Indiana from forest management practices for decades. Many of these birds are known as "neotropical migrant songbirds" because they migrate from Central and South America to raise their young in the forests of Indiana every summer. In The Forest Defender, Dr. William Buskirk, PhD., Professor of Biology, Emeritus, at Earlham College, stated,

Research indicates that large, contiguous parcels are required to sustain viable populations of forest-dependent species. . . . Edges between forests and adjacent agricultural, residential or clear-cut habitats are detrimental to forest inhabiting birds due to intrusion of predators (House Cats, American Crows, Common Grackles, House Wrens), of brood parasites (Brown-headed Cowbirds), of competitors, and of the drying and sunlight effects on vegetation structure and food supplies. Thus the highest quality forests are large and continuous stands with minimal peripheral and interior edge.<sup>39</sup>

Buskirk identified 10 different birds that depend on contiguous old forest and another 5 that inhabit wider varieties and ages of forest. Of these, the Broad-winged Hawk, Eastern Whip-poor-will, Black-and-white Warbler, Worm-eating Warbler, and Hooded Warbler are designated as "Species of Special Concern," and the Cerulean Warbler is designated as "endangered" on the Indiana's State Endangered Species List. All 15 of these birds are rare to entirely absent from many Indiana counties that remain largely cleared of their native forest cover. Forest songbirds that nest in the woodlots in these counties experience an extremely high rate of nestling mortality from higher predation and parasitism that occurs along the woodlot edges. This has led ornithologists to call these woodlots "population sinks"-- areas where breeding

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<sup>37</sup> Brodman, R., "The Impact of Logging on Amphibians". The Forest Defender, Autumn 2014. page 12.

<sup>38</sup> *Ibid.* page 13.

<sup>39</sup> Buskirk, W.H., "Birds, Biodiversity and Hoosier Forests". The Forest Defender, Spring 2013. page 9.

parents never successfully replace themselves. In Indiana, these forest songbirds are common today only in the limited south central region where our public forests are concentrated.

Buskirk explained further that in Indiana, old growth forests are one of “the least represented habitat types” and are “the most time consuming to restore and produce. . . . Human disturbances continually arrest or set back the ecological succession that leads to old forest communities. . . . *Even selective logging arrests development of the forests, as it takes the mature “nurse trees” in the later stages of succession* [emphasis added].” He concluded that in Indiana, managers of the state forests and the Hoosier National Forests have the best opportunity to restore old growth forests and that, “public lands should not be used to produce habitat types that are abundant on the non-public landscape, as populations of species using those are already sustainable.”<sup>40</sup>

More than 20 years ago, a group of six scientists studied the parasitism levels by Brown Headed Cowbirds of 1,293 nests of forest songbirds in the Hoosier National Forest and Yellowwood State Forest during four breeding seasons from 1990 to 1993. As discussed above, the Brown Headed Cowbird is an open field bird that lays its eggs in the nests of other birds including those of forest songbirds near forest edges replacing their young with its own resulting in the mortality of songbird hatchlings. The cowbird avoids interior forest. Its population dramatically increased in Indiana as our forests were cleared. The forest songbird nests in the Study were in and near interior forests, clearcuts, smaller cuts, wildlife openings, and an old field. The scientists concluded the following:

In terms of management, it is evident that disturbance and fragmentation at all spatial scales can increase levels of parasitism in forest-breeding neotropical migrants. Parasitism levels are elevated in proximity to both internal and external edge. . . . When combined with other deleterious effects of forest fragmentation such as reduced habitat availability and increased nest predation, brood parasitism may seriously threaten neotropical migrant populations. If we are to preserve viable populations of these forest-breeding birds, it may be necessary to maintain a network of large continuous tracts of forest and to minimize the amount of internal edge. The forests of south-central Indiana may constitute an important source for populations of neotropical migrants. Management activities presently occurring in state and national forests, such as timber harvest and the creation and maintenance of forest openings, increase the area of internal edge habitat. *Such habitat alteration may reduce nesting success and thus detract from this landscape’s value as a source for populations of neotropical migrant birds* [emphasis added].<sup>41</sup>

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<sup>40</sup> Dr. Buskirk has served on the IDNR’s Nongame Technical Advisory Committee for Bird Conservation and has 55 years of experience working in Indiana.

<sup>41</sup> Winslow, D.E., Whitehead, D.R., Whyte, C. F., Koukal, M.A., Greenberg, G.M., & Ford, T.B., 34. “Within-Landscape Variation in Patterns of Cowbird Parasitism in the Forests of South-central Indiana”., In: *The Ecology*

## 7) Forestry is Not Needed to Keep Forests Healthy.

We do not dispute that by practicing silviculture, foresters produce more merchantable trees from our hardwood forests. However, our hardwood forests do not depend on forestry or the practice of silviculture to survive or be healthy. In *THE PRACTICE OF SILVICULTURE; Applied Forest Ecology*, one of most widely read college textbooks on forestry in America, the authors state:

**Improving on Nature Through Silviculture** – The most magnificent forests that are ever likely to develop were present before the dawn of civilization and grew without human assistance.<sup>42</sup>

Silviculture uses applied forest ecology “to create and maintain the kind of forest that will best fulfill the objectives of the owner and the governing society” and “is usually far more the imitation of the natural processes of forest growth and development than of substitution for them.”<sup>43</sup> Thus, when foresters “thin” our hardwood forests, removing inferior trees, culls or less desirable trees so that other trees will grow better, they are accelerating what our mixed hardwood forests do naturally through the fierce competition of trees for sunlight. However without this management, rather than just dying, the forest will continue to evolve through natural succession and from ever occurring disturbances of minor and major scale. Drs. Jackson and Whitaker criticized the views of current state forest managers toward our hardwood forests as follows:

Our state’s hardwood forests are being characterized too simplistically by managers seeking to produce commercial timber on public forestland. Indiana’s mixed hardwood forests are part of what was once the largest and most diverse temperate hardwood forest on the planet. These forests are comprised of not just “oak and hickory” but a broad assemblage of species. A stunning variety of animals, insects and other arthropods, worms, plants (including mosses), fungi (including mushrooms), and microbes evolved from these vast mixed hardwood forests, which were unmanaged by human hands for thousands of years. . . . Rather than a static, shaded condition, old growth forest is ever evolving and contains a continuum of successional habitats . . .<sup>44</sup>

Foresters also point out the structural diversity and biological value of old growth forests that is lacking from younger managed forests.

The term “old growth” has also been used to describe stands of specific structural characteristics, . . . Structural features include large, living old

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*and Management of Cowbirds and their Hosts*. Smith, Cook, Rothstein, Robinson, and Seoly (eds) 2000. University of Texas Press, Austin, TX.

<sup>42</sup> Smith, D. M., Larson, B. C., Kelly, M. J., and Ashton, P. M. S., *THE PRACTICE OF SILVICULTURE: Applied Forest Ecology: Ninth Edition*, ©1997. John Wiley & Sons, Inc. p. 4.

<sup>43</sup> *Ibid.* pp 4 & 9.

<sup>44</sup> Jackson, M.T. & Whitaker, J.O. “Interior Forests in Indiana”. *The Forest Defender*, Winter 2013-2014. pp. 3-5.

trees; large dead standing trees, massive fallen logs; relatively open canopies with foliage in many layers and diverse understories. . . . The “structural” definition is more useful in describing stands inhabited by certain rare plants and animals . . . The old growth stage probably has the greatest horizontal and vertical variation in structure, with both large and small trees growing in separate and intermixed patches (Alaback 1982, a,b). . . . A few plants and animals are dependent on the rotting wood or other conditions found exclusively in these old growth forests for their survival. The spotted owl in the Pacific northwestern United States and the red-cockaded woodpecker in the Southeast, for example, seem able to exist only in forests with old growth structures.<sup>45</sup>

While they may not be as glamorous as the Spotted Owl, there are at least two bats, the Indiana Bat and the Northern Long-eared Bat, as well as the Allegheny Woodrat (our native packrat), that need large, old dead and living trees or other structures found in the old forests within our state forests to survive as conceded by the DOF. The Indiana Bat is a federal endangered species. The Northern Long-eared Bat is proposed officially for listing as a federal endangered species. The Allegheny Woodrat is a state endangered species.<sup>46</sup> Two other rare mammals, the Pygmy and Smoky Shrews, were discovered in the state in 1982 and live in the deep soils of interior forests in south central Indiana.<sup>47</sup> Both are “species of special concern” on the state’s endangered species list.<sup>48</sup>

Our hardwood forests have growth cycles that are substantially longer than cutting cycles allow forests to age in the state forests. Documentation of the ages of hardwood trees that are dominant in eastern hardwood forests, including those in Indiana, has found that trees such as white oak, northern red oak, tulip poplar, white ash, sugar maple, red maple, American elm, American beech, shagbark, pignut, and mockernut hickories, and sassafras have maximum lifespans ranging from 300 to 600 years.<sup>49</sup> Yet the DOF’s current strategic plan subjects all but about 7,000-8,000 acres (four to five percent) of the state forests to commercial logging.<sup>50</sup> Most of this logging is done on a 15-25 year cutting cycle, meaning that some type of logging is carried out in each tract of state forest that is managed as a harvest unit every 15-25 years.<sup>51</sup> In

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<sup>45</sup> Oliver, C. D. & Larson, B.C., *Forest Stand Dynamics*. © 1990. McGraw Hill. Chapter 5, “Old growth stage”. pp. 153-154. Chadwick Oliver is Professor of Silviculture at the College of Forest Resources, University of Washington & Bruce Larson is Associate Professor of Forestry at the School of Forestry and Environmental Studies, Yale University.

<sup>46</sup> See “Indiana’s State Endangered Species” online at: [http://www.in.gov/dnr/fishwild/files/fw-Endangered\\_Species\\_List.pdf](http://www.in.gov/dnr/fishwild/files/fw-Endangered_Species_List.pdf). The proposed listing of the Northern Long-eared bat is found at: [http://ecos.fws.gov/tess\\_public/pub/SpeciesReport.do?listingType=P](http://ecos.fws.gov/tess_public/pub/SpeciesReport.do?listingType=P).

<sup>47</sup> Jackson, M.T. & Whitaker, J.O. “Interior Forests in Indiana”. *The Forest Defender*, Winter 2013-2014. p. 4.

<sup>48</sup> [http://www.in.gov/dnr/fishwild/files/fw-Endangered\\_Species\\_List.pdf](http://www.in.gov/dnr/fishwild/files/fw-Endangered_Species_List.pdf)

<sup>49</sup> Virginia Tech, The Department of Forest Resources and Environmental Conservation, College of Natural Resources, *Average and Maximum Lifespan of Virginia Trees*, <http://bigtree.cnre.vt.edu/TreeAge.htm>

<sup>50</sup> See footnote 21 for the sources of this estimate.

<sup>51</sup> IDNR, Division of Forestry. *INDIANA STATE FORESTS ENVIRONMENTAL ASSESSMENT 2008-2027; Increased Emphasis on Management & Sustainability of Oak Hickory Communities On the Indiana State Forest System*. Dec. 2008. p. 15

single tree selection, this usually equates to one fifth of the “mature” or saw timber size trees on each acre being removed in every harvest.<sup>52</sup> This means that the oldest trees range from 75 to 125 years in age before they are cut down, well before even the average lifespan of most of these trees which ranges from 100 to 300 years.<sup>53</sup> In addition to depriving the forest of standing snags and large logs which are some of its most important habitat niches and sources for organic material, this removal truncates the symbiotic growth of “hypogenous” or subterranean fungi that occurs on the living roots of older trees and is very important for healthy forest regeneration.<sup>54</sup>

In truth, the current use of silviculture by current state forest managers views our public forest from an agricultural standpoint as though they are primarily a crop, a supply of wood, with all other uses of state forests allowed so long as they support the production of this wood for the timber industry.

We commend the DOF’s historic efforts to provide professional forestry guidance to private woodland owners to remove grape vines, cull trees and diseased trees, to do thinnings, release cuttings, and improvement cuttings to improve the quality of forest stands and crop trees, to encourage proper regeneration, etc. If meeting the narrow objective of generating revenue from the wood in their forests gives private woodland owners the incentive to keep their lands in forest, all Hoosiers benefit, even if only indirectly.

However, as woodlands that we all own, our state forests are a public resource that should be managed to provide more direct benefits for Hoosiers and not merely as a form of state sponsored agriculture for the profit of the timber industry. In the previously cited text books, foresters write:

The production of timber, though the most common objective, is neither the only nor necessarily the dominant one. It is a mistake for foresters to assume that timber production is or should be the sole objective of silviculture. Frequently, especially with public forests, such benefits as water, wildlife, grazing, recreation, or aesthetics may be more important; water and wildlife always have to be taken into account.<sup>55</sup>

Other foresters write, “Certain development stages have value to society other than the market value of the timber. Some stages are more or less aesthetically pleasing and affect the recreational value of the stands. Other stand structures have value by their contribution to the habitat of certain wildlife species.”<sup>56</sup>

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<sup>52</sup> *Ibid.*

<sup>53</sup> Virginia Tech, The Department of Forest Resources and Environmental Conservation, College of Natural Resources, *Average and Maximum Lifespan of Virginia Trees*, <http://bigtree.cnre.vt.edu/TreeAge.htm>

<sup>54</sup> Jackson, M.T. & Whitaker, J.O., “Interior Forests in Indiana”. *The Forest Defender*, Winter 2013-2014. pp. 3 & 5.

<sup>55</sup> Smith, D.M., Larson, B. C., Kelly, M. J., & Ashton, P. M.S., *THE PRACTICE OF SILVICULTURE; Applied Forest Ecology; Ninth Edition*. p. 4.

<sup>56</sup> Oliver, C.D. & Larson, B.C. *Forest Stand Dynamics*. p. 162.

Indeed, why should state forests exist if they are here purely for the sake of generating merchantable timber for private interests? Private industrial woodlands can achieve that objective more efficiently and arguably with less cost to the taxpayer.

We agree that some management may be necessary to control nonnative invasive plants once they become established in forests. However, Indiana's scientists who have studied invasive plants extensively have found that it is human activities that disturb the soil and increase sunlight in the forest, particularly logging, forest clearing, and the roadbuilding for these activities, that have introduced Japanese Stiltgrass, Garlic Mustard, other nonnative pest plants into our public forests and enabled them to become a problem. An article by IUPUI geographer, Dr. Timothy Brothers in the Fall 2013 Issue of The Forest Defender, and an interview of IU botanist Dr. Angie Shelton in the Winter 2013-2014 Issue of The Forest Defender explain this problem and point out that the forests where invasives are the least present are those that have not been opened up to logging and road-building.

Foresters also concede that logging can open forests to invasives. To quote the advice of a professional forester to the Indiana Forestry and Woodland Owners Association:

Invasive species – landowners must be vigilant about monitoring their forest lands for infestation by invasive plants. . . Once established, they are often difficult and expensive to control. Forest edges are likely establishment sites. Also, harvests create daylight within the stands. These are very susceptible to invasion. . . .<sup>57</sup>

***Nevertheless for those who believe that IDNR must be able to control the spread of invasives throughout state forests, Subsection 10(b)(4) in SB 548 and HB 1580 will allow the Department of Natural Resources to monitor and control invasive species in State Wild Areas.***

#### **8) Wild Areas Will Provide Needed Control Areas to Understand Impacts of Forest Management and How Forests Respond Naturally to Stresses.**

Conserving large tracts of our state forests in an unlogged condition will provide a needed control, i.e., the baseline that we need to compare the impacts of management activities in our state forests with and to observe how forests are responding naturally to stresses. In the textbook, *Creating a Forestry for the 21<sup>st</sup> Century*, foresters write:

The ability of society to understand, manage, and sustain the diversity of values associated with forests depends in part on our ability to understand ecological changes that forests undergo over time in natural, semi-natural, or unmanaged stands and landscapes and understand the ecology of changes associated with direct and indirect human activity.<sup>58</sup>

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<sup>57</sup> John Stambaugh, SAF-CF, ACF, Stambaugh Forestry, Springville, IN, 2013, *2013-2014 Directory of Professional Foresters*, INDIANA FORESTRY AND WOODLAND OWNERS ASSOCIATION, [www.ifwoa.org](http://www.ifwoa.org), page 44.

<sup>58</sup> *Creating a Forestry for the 21<sup>st</sup> Century, The Science of Ecosystem Management*. Edited by Kathryn A. Kohm and Jerry F. Franklin. © 1997. Island Press. p. 12.

An article recently written by foresters and forest ecologists in the Journal of Forestry explains how unmanaged control forests and reference conditions are informing silvicultural decisions for managing forests. Two case studies involving mixed northern hardwood forests in Michigan and Minnesota are presented. The authors state,

Experimental controls are among the most basic scientific principles, as relevant to applied sciences, such as forestry, as they are to basic branches of science. Harvesting is physically different from natural disturbance; however there still is much debate as to how forest productivity and maintenance of species diversity are impacted by those differences over time. The scientific method dictates that potential impacts can be studied by comparing stands that experience only natural disturbance with stands subjected to harvesting. . . .

## Conclusions

Old-growth references and second-growth controls provide a scientific basis for comparison with harvested forests to help determine when harvesting is done in a sustainable manner, e.g., harvested forests maintain the same level of productivity and species richness as naturally disturbed stands over time. By establishing references and controls for each forest type within ecoregions, we are better able to attribute changes in productivity to harvesting versus other phenomena, because unharvested stands also may experience productivity changes in response to regional and global factors such as climate change and nitrogen deposition. Controls are also the best way to avoid falsely attributing negative or positive changes in the forest to harvesting. For example, if a rare species disappeared from managed and unharvested controls at the same time, we could conclude that harvesting was not the cause, whereas harvesting would likely be blamed in the absence of controls. The same would be true if productivity increased in both the managed and the control areas.<sup>59</sup>

In addition to changes occurring in our climate and recent droughts, other stresses to our forests include the spread of invasives and the proliferation of tree pests and diseases. Their greater resistance to invasive plants suggest that older, more contiguous forests that have fewer large openings, roads, and other artificial incursions, regulate and insulate their microclimates more than younger forests with these incursions. They are also likely to have a greater diversity of tree species, more age classes, and larger gene pools for individual tree species to resist the spread of these problems with. A case in point involves the rapid devastation occurring from the nonnative emerald ash borer (EAB). To many observers, EAB appears to be spreading quickly across cities, along streets and roads and from openings in

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<sup>59</sup> Frelich, L.E., Cornett, M.W. & White, M.A., "Controls and Reference Conditions in Forestry: The Role of Old-Growth and Retrospective Studies". Journal of Forestry. October/November 2005. pp. 339-344.

managed forests while stands of ash trees in deeper interior forests in regions already attacked by this pest still appear to have healthy ash.<sup>60</sup> In November 2014, the DOF proposed an “ash reduction/ash salvage” to cut nearly all merchantable ash trees in all of the state forests before they can no longer be “utilized for commercial wood products” and to “reduce the food source for EAB” to slow the spread of this pest.<sup>61</sup>

The DOF’s proposal does not address the documented role of the wood products industry in the spread of EAB. According to the Farm Foundation, the EAB can travel up to 2,000 meters per year on its own but, when assisted by other means including commercial logging by the wood products industry, EAB can travel up to 20 kilometers per year.<sup>62</sup>

Furthermore, agencies in other states which have prepared more extensive plans to fight the spread of EAB are discouraging widespread salvage logging as a means for combating EAB. According to the Vermont Department of Forests, Parks and Recreation, “Widespread salvage shrinks the gene pool of a species and could make things worse. Important genes, including those that may make ash resistant to emerald ash borer, would be lost. Continuing research may uncover better management strategies.”<sup>63</sup>

Indeed, scientists at the US Forest Service Northern Research Station have found some “lingering ash” that have survived exposure to EAB in Midwestern hardwood forests and appear to have tolerance or resistance to the pest.<sup>64</sup> While the DOF’s proposal would leave some “residual ash” to be monitored for “lingering ash,” the proposal provides no specifics on which ash would be left alive, and researchers have yet to establish a proven method for identifying ash trees with a higher probability of having a resistance gene to EAB. Most importantly, DOF’s approach appears to fly in the face of this highly relevant Forest Service research which states:

This finding supports an extension of the resource dilution hypothesis whereby concentration of EAB on a few trees in low ash density areas leads to rapid decline of these trees. This contradicts an extension of the resource concentration theory that greater host density increases relative pest abundance and host mortality.<sup>65</sup>

This research found a positive relationship between ash tree density and rates of survival. In other words, low density stands of ash--the objective in DOF’s salvage proposal for *all* of our

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<sup>60</sup> Stands of white ash have been observed this past year in a comprehensive inventory of flora and fauna launched by IFA and several dozen scientists and other organizations in the heart of the Morgan-Monroe Back Country Area that appear to be healthy, while white ash in forests more accessible to roads further south in the north-to-south line of advance of the EAB are being attacked and succumbing to the pest. The Morgan-Monroe Back Country Area is part of the Low Gap State Wild Areas proposed in the Wild Areas legislation..

<sup>61</sup> See “DRAFT Forest Resource Management Guide, November 24, 2014, Division of Forestry Indiana State Forests Ash Reduction/Ash Salvage” at: [http://hoosierforestwatch.com/wp-content/uploads/2014/12/fo-SF\\_EAB\\_Salvage\\_12042014.pdf](http://hoosierforestwatch.com/wp-content/uploads/2014/12/fo-SF_EAB_Salvage_12042014.pdf). IFA will provide a copy of its comments on this salvage plan upon request.

<sup>62</sup> <https://www.farmfoundation.org/news/articlefiles/1717-BossenbroekPREISM2009.pdf>

<sup>63</sup> [www.vtfpr.org/protection/documents/eab\\_mgmt\\_mar09.doc](http://www.vtfpr.org/protection/documents/eab_mgmt_mar09.doc)

<sup>64</sup> Knight K.S., Brown J.P. & Long R.P. , “Factors affecting the survival of ash (*Fraxinus* spp.) trees infested by emerald ash borer (*Agrilus planipennis*)”. 2012. Published online.

<sup>65</sup> *Ibid.*

state forests--have a faster rate of mortality. "Our results suggest that lowering the density of ash in a stand will not protect the stand from EAB; rather the remaining ash trees will die, perhaps even at a slightly faster rate."<sup>66</sup>

By removing all but a few residual ash trees in unspecified "target areas", the DOF will likely expedite the mortality of the residual ash and eliminate the crucially important and urgently needed opportunity to learn more about EAB behavior and ash resistance to the EAB in Indiana. The appearance of seemingly healthy ash in isolated areas of state forests within the infected region, the blanket removal approach in DOF's proposed EAB salvage plan, and the Forest Service Research underscore why setting aside State Wild Areas as control areas makes sense. Rather than a preoccupation with the quick salvaging of the merchantable value of as many ash trees as possible, larger populations of ash with inherently greater genetic variability to resist the EAB should be left alive to study in these State Wild Areas to find more effective methods of control.

#### **9) Enacting Wild Areas Legislation is Needed to Resolve an Important, Long-term Debate on Public Policy Regarding Multiple Use Management of Our State Forests**

SB 548 and HB 1580 do not "micromanage" IDNR. Rather than telling the Division of Forestry how to cut trees, we are seeking legislation to resolve a dispute of broad public policy that concerns whether the long-accepted multiple use policy for our state forests means that some lands should be set aside from commercial logging within the state forests to provide other public values such as wilderness recreation, for which the state forests are ideally suited. SB 548 and HB 1580 would answer this question by setting aside from logging some of the most scenic, rugged, and deeper portions of the state forests as State Wild Areas and laying out basic principles to manage them to protect their wilderness characteristics. ***Section 12 of this legislation will charge the Indiana Natural Resources Commission, the rulemaking body of Department of Natural Resources, with the responsibility to promulgate regulations addressing the specific details for managing those areas, leaving such details to the resource professionals in the Department. Subsections 10(a)(1) and 10(b) of this legislation leave discretion to the Department to use motorized vehicles and equipment, maintain access lanes, manipulate vegetation and control plant and wildlife diseases and invasive species to address challenges that may arise in the management of these areas.***

We believe that multiple use should allow for large areas of our state forests to be set aside from logging for wilderness recreation as well as the protection of ecological resources and water quality just as the Multiple Use Sustained Yield Act of 1960, the Wilderness Act of 1964, the Eastern Wilderness Act of 1974 and the National Forest Management Act of 1976 have accommodated such objectives in our national forests. The Legislature has seen fit to pass many other laws defining parameters that state agencies operate within and policies that they must implement and is now considering legislation, such as HB 1351, which would prohibit state agencies from promulgating rules that are not explicitly called for in a state or federal statute. The Legislative Intent in IC 14-23-4-1, our state forest law, states: "*It is the public policy*

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<sup>66</sup> *Ibid.*

*of Indiana to protect and conserve the timber, water resources, wildlife, and topsoil in the forests owned and operated by the division of forestry for the equal enjoyment and guaranteed use of future generations.”* While the law allows for the practice of forestry, contrary to the management philosophy of current managers, it does *not require* commercial logging on virtually all state forest acreage.

The state forests provide some of the best and only opportunities for wilderness recreation in Indiana. These opportunities are not provided by the state’s other public lands. The 95 percent of Indiana that is private land is also largely off limits to such recreation. Until 2005, both Republican and Democratic Gubernatorial Administrations managed the state forests to provide substantive tracts of forest off limits to logging for wilderness recreation and the protection of ecological resources and water quality.

Since then under the direction of a new state forester, 90 percent of what was set aside in the state forests for these purposes has been removed for timbering that has occurred already or could occur in the next 10 years. The new direction has also increased timbering throughout the state forests to levels far beyond any practiced in the previous century. This aberrant departure from previous state forest management is placing private commercial logging above all public uses violating any pretense of balanced “multiple use” of these public forests to serve an industry that does not depend on state forests for the wood. We believe this departure is seriously harming the interests of Hoosier taxpayers who need appreciable wild public forests left in Indiana to enjoy as part of our quality of life.

IFA and hundreds of Hoosiers have voiced these concerns repeatedly to the Governor and the IDNR but have been ignored. That being the case, Representative Koch and Senator Steele authored resolutions last year that were coauthored by extraordinary majorities of members in both chambers of the Legislature to study the issue of establishing areas of wilderness on state public lands. Thanks to objections by the Indiana Hardwood Lumbermen’s Association, the leadership of the Legislative Council would not allow those studies to take place. Instead, that leadership asked us to come back with specific proposals to protect areas of wilderness in the state forests.

Accordingly, just as the Legislature exercised its rightful authority to enact IC 14-23-4-1 more than a century ago, we are asking you to establish the State Wild Areas proposed in SB 548 and HB 1580 setting these lands aside in the state forests for public enjoyment. We are asking you to take this action now, so that Hoosiers will not have to wait another century before our children’s children can once again enjoy the over 100 year old stands of majestic forests that have returned to our state forests and are now on the chopping block.

The Indiana Forest Alliance thanks you sincerely for taking the time to read this statement and consider our views. We hope that we can work together to address this extremely important issue for the future of our state.

Respectfully,

Jeff

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