THE FUTURE OF THE FOREST. pdf

1: The future of the forest: County adopts new forest management plan | Bemidji Pioneer

The Future Forest was made as part of the annual flower festival FYJA, who supported the project in every possible way, and can be found in the botanical garden of.

As a general rule, forests dominated by angiosperms broadleaf forests are more species-rich than those dominated by gymnosperms conifer, montane, or needleleaf forests , although exceptions exist. Forests sometimes contain many tree species within a small area as in tropical rain and temperate deciduous forests , or relatively few species over large areas e. Forests are often home to many animal and plant species, and biomass per unit area is high compared to other vegetation communities. Much of this biomass occurs below ground in the root systems and as partially decomposed plant detritus. The woody component of a forest contains lignin , which is relatively slow to decompose compared with other organic materials such as cellulose or carbohydrate. Components[edit] Even, dense old-growth stand of beech trees Fagus sylvatica prepared to be regenerated by their saplings in the understory , in the Brussels part of the Sonian Forest. A forest consists of many components that can be broadly divided into two categories that are biotic living and abiotic non-living components. The living parts include trees , shrubs , vines , grasses and other herbaceous non-woody plants, mosses , algae , fungi , insects , mammals , birds , reptiles , amphibians , and microorganisms living on the plants and animals and in the soil. Biogradska forest in Montenegro Spiny forest at Ifaty, Madagascar , featuring various Adansonia baobab species, Alluaudia procera Madagascar ocotillo and other vegetation A forest is made up of many layers. Starting from the ground level and moving up, the main layers of all forest types are the forest floor, the understory and the canopy. The emergent layer exists in tropical rainforests. Each layer has a different set of plants and animals depending upon the availability of sunlight, moisture and food. Forest floor contains decomposing leaves, animal droppings, and dead trees. Decay on the forest floor forms new soil and provides nutrients to the plants. The forest floor supports ferns, grasses, mushroom and tree seedlings. Understory is made up of bushes, shrubs, and young trees that are adapted to living in the shades of the canopy. Canopy is formed by the mass of intertwined branches, twigs and leaves of the mature trees. The crowns of the dominant trees receive most of the sunlight. This is the most productive part of the trees where maximum food is produced. The canopy forms a shady, protective "umbrella" over the rest of the forest. Emergent layer exists in the tropical rain forest and is composed of a few scattered trees that tower over the canopy. Forests can be classified in different ways and to different degrees of specificity. One such way is in terms of the biome in which they exist, combined with leaf longevity of the dominant species whether they are evergreen or deciduous. Another distinction is whether the forests are composed predominantly of broadleaf trees, coniferous needle-leaved trees, or mixed. Boreal forests occupy the subarctic zone and are generally evergreen and coniferous. Tropical and subtropical forests include tropical and subtropical moist forests , tropical and subtropical dry forests , and tropical and subtropical coniferous forests. Physiognomy classifies forests based on their overall physical structure or developmental stage e. Forests can also be classified more specifically based on the climate and the dominant tree species present, resulting in numerous different forest types e. The number of trees in the world, according to a estimate, is 3 trillion, of which 1. The estimate is about eight times higher than previous estimates, and is based on tree densities measured on over , plots. It remains subject to a wide margin of error, not least because the samples are mainly from Europe and North America. Old-growth forest contains mainly natural patterns of biodiversity in established seral patterns, and they contain mainly species native to the region and habitat. In contrast, secondary forest is regrowing forest following timber harvest and may contain species originally from other regions or habitats. These 26 major types can be reclassified into 6 broader categories: Temperate needleleaf[edit] Temperate needleleaf forests mostly occupy the higher latitude regions of the Northern Hemisphere , as well as high altitude zones and some warm temperate areas, especially on nutrient-poor or otherwise unfavourable soils. These forests are composed entirely, or nearly so, of coniferous species Coniferophyta. In the Northern Hemisphere pines Pinus , spruces Picea , larches Larix , firs Abies , Douglas firs Pseudotsuga and hemlocks Tsuga , make up the canopy, but other taxa are also important. In the Southern Hemisphere ,

most coniferous trees members of the Araucariaceae and Podocarpaceae occur in mixtures with broadleaf species, and are classed as broadleaf and mixed forests. They are generally characteristic of the warmer temperate latitudes, but extend to cool temperate ones, particularly in the southern hemisphere. They include such forest types as the mixed deciduous forests of the United States and their counterparts in China and Japan, the broadleaf evergreen rainforests of Japan, Chile and Tasmania , the sclerophyllous forests of Australia, central Chile, the Mediterranean and California, and the southern beech Nothofagus forests of Chile and New Zealand. Seasonal tropical forests , perhaps the best description for the colloquial term " jungle ", typically range from the rainforest zone 10 degrees north or south of the equator , to the Tropic of Cancer and Tropic of Capricorn. Forests located on mountains are also included in this category, divided largely into upper and lower montane formations on the basis of the variation of physiognomy corresponding to changes in altitude. The seasonality of rainfall is usually reflected in the deciduousness of the forest canopy, with most trees being leafless for several months of the year. However, under some conditions, e. Thorn forest , a dense forest of low stature with a high frequency of thorny or spiny species, is found where drought is prolonged, and especially where grazing animals are plentiful. On very poor soils, and especially where fire or herbivory are recurrent phenomena, savannas develop. Trees include Picea obovata dominant on right bank , Larix sibirica , Pinus sibirica , and Betula pendula. Sparse trees and savanna are forests with lower canopy cover of trees. They occur principally in areas of transition from forested to non-forested landscapes. The two major zones in which these ecosystems occur are in the boreal region and in the seasonally dry tropics. At high latitudes, north of the main zone of boreal forest, growing conditions are not adequate to maintain a continuous closed forest cover , so tree cover is both sparse and discontinuous. This vegetation is variously called open taiga , open lichen woodland, and forest tundra. A savanna is a mixed woodland grassland ecosystem characterized by the trees being sufficiently widely spaced so that the canopy does not close. The open canopy allows sufficient light to reach the ground to support an unbroken herbaceous layer consisting primarily of grasses. Savannas maintain an open canopy despite a high tree density. However, they can be managed in ways that enhance their biodiversity protection functions and they can provide ecosystem services such as maintaining nutrient capital, protecting watersheds and soil structure, and storing carbon. Forestry , Logging , and Deforestation Redwood tree in northern California redwood forest, where many redwood trees are managed for preservation and longevity, rather than being harvested for wood production Forests provide a diversity of ecosystem services including: Therefore, they are necessary for stop Climate Change. According to the Special Report on Global Warming of 1. For example a research from , show that forests induce rainfall. If the forest is cut, it can lead to drought. Some researchers state that forests do not only provide benefits, but can in certain cases also incur costs to humans. Forest management has changed considerably over the last few centuries, with rapid changes from the s onwards culminating in a practice now referred to as sustainable forest management. Forest ecologists concentrate on forest patterns and processes, usually with the aim of elucidating cause-and-effect relationships. Foresters who practice sustainable forest management focus on the integration of ecological, social, and economic values, often in consultation with local communities and other stakeholders. Priest River winding through Whitetail Butte with lots of forestry to the eastâ€”these lot patterns have existed since the midth century. The white patches reflect areas with younger, smaller trees, where winter snow cover shows up brightly to the astronauts. Dark green-brown squares are parcels Humans have generally decreased the amount of forest worldwide. Anthropogenic factors that can affect forests include logging, urban sprawl , human-caused forest fires , acid rain , invasive species , and the slash and burn practices of swidden agriculture or shifting cultivation. The loss and re-growth of forest leads to a distinction between two broad types of forest, primary or old-growth forest and secondary forest. There are also many natural factors that can cause changes in forests over time including forest fires , insects , diseases , weather, competition between species, etc. In , the United Nations Food and Agriculture Organization [42] reported that world deforestation, mainly the conversion of tropical forests to agricultural land, had decreased over the past ten years but still continues at a high rate in many countries. Globally, around 13 million hectares of forests were converted to other uses or lost through natural causes each year between and as compared to around 16 million hectares per year during the s. The study covered countries and areas. Brazil and Indonesia, which had the highest loss of

forests in the s, have significantly reduced their deforestation rates. China instituted a ban on logging, beginning in , due to the erosion and flooding that it caused. As a result, the net loss of forest area was reduced to 5. In , a study for Nature Climate Change showed that the trend has recently been reversed, leading to an "overall gain" in global biomass and forests. This gain is due especially to reforestation in China and Russia. These are often created for human benefits; Attention Restoration Theory argues that spending time in nature reduces stress and improves health, while forest schools and kindergartens help young people to develop social as well as scientific skills in forests. These typically need to be close to where the children live, for practical logistics.

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2: What is the future of forests? | Forest Education Foundation

#forestproud. We are a diverse community of forest stewards responsible for shaping the future of North America's forests. We value the renewable products and benefits they provide us and are committed to making choices that keep forests as forests.

While the focus of this lab is the migration of trees in response to the warming climate, an important related discussion is the change in the entire ecosystem. If trees in a particular location migrate in response to climate, what happens to the rest of the ecosystem? What life forms will be similarly disrupted by a change in climate? Or by changes to the forest? Students work through several exercises examining the changing forest and then conclude by examining changes in their own "home" ecosystem and choosing appropriate tree species for the future. This a good point to take students back outside to the tree that they visited in the opening lesson. While outside, have a discussion about the changing climate and the future of their tree. Teachers may also want to invite a local arborist to come speak to the class about trees and their needs. Teachers will want to check the links before class. Also, a review of modeling may be needed before returning to the Climate Wizard site. In the past, when the ice sheets retreated, trees adapted because the change was slow. This change in climate is many times faster. Get students thinking about the implications of climate change for their own lives in years with the discussion described below. Hide Purpose of the discussion: As students look at predicted climate changes in their home region, they may need to step back and consider the implications for their own lives. How will the trees and other plants have changed? How might the change affect their recreation or livelihood in 30 years? Encourage students to think beyond the next few years, to the time when they are adults. What do they hope to be doing at that time? Write the primary discussion question on the board. If possible, seat students facing one another in a semi-circle. Have students stand at the front to share their responses. Put climate change in perspective by considering the following: How old will you be in , ? How much will the temperature in most of the United States have changed by ? Give several examples of how the increase in average temperature or precipitation could impact your daily life. The discussion is open-ended and meant to get students thinking forward; there is no absolute answer. Preview the two video clips: Sugaring Wisconsin and Maple Sugar Production link is in lower-right corner of page before class, be prepared to answer student questions about the maple sugaring process and why it is changing in the southern part of the range. Scientists at Cornell University, near Ithaca, New York, have studied the changes in the onset and duration of the maple sugar season. Students will read this short synopsis of their findings: Maple Sap will flow a month earlier and work with an interactive showing the changes. The significant message in this part of the lesson is that if farmers adapt to the new time period of the sugaring season, they will still have sap flow in the northern part of the range. However, in the southern part of the range, as the climate warms, there will not be sufficient numbers of freeze days for sap flow, even if farmers adapt, the industry will not thrive. This is the concluding discussion for the case study: This lab is presented from the point of view of the farmers. What observations of climate change do the farmers in Wisconsin and New England have in common? How has the spring run of maple sugar changed during their years of work with the maple tree? Do you have relatives or friends that work in the out-of-doors or with plants? What can plants tell us about the weather and climate that we might not notice without them? What are the impacts of climate change on plants in your region? Have students make a two-column chart in their notebooks or on a piece of paper. Label one side New England the other Wisconsin. Break the class into two smaller groups to discuss their notes, assign one group to represent farmers from New England, the other Wisconsin. If necessary, replay the videos. Have the students list on their charts, the changes that are described in the videos. After reviewing the videos and their notes, bring the class back together as a large group to compare their information and concerns. Note the similarities and differences in the two stories. One of the keys to confirming climate change is the fact that similar changes are showing up in multiple locations. Return to the Maple Syrup Sap Flow days interactive and work through it as a class. Take time to relate the change in the duration of flow to climate. Note that the sap flow days are moving towards the coldest possible period, December. Since the trees need to go through a winter "dormant

period" in order for the sap to flow, the season cannot continue to move beyond this time frame. Teachers may want to elaborate on the changes in other agricultural products by sharing the U. Climate Impacts by Sector: Agriculture from Lab 7A. Time will be needed for individual or small group research and presentations. Resources for this research are listed on the student page and in the Additional Resources section below. Teachers may want to precede this lab with a walk around campus or a short field trip to get students thinking about their local trees, available habitats, and climate. If a field trip or walk is not possible, a slide show can be an alternative way to get "outside.

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3: Future of the forest | OSU Press

The division was tasked with preserving forests not just for future generations to enjoy, but also to make use of the forest's products. That remains a core mission of the division, State.

Future of the forest March 12, What is the inherent value of a forest? Is there an achievable compromise between human and preservation concerns within forest management? Jim Furnish, author of newly released Toward a Natural Forest , knows firsthand how difficult these questions can be to answer. A former US Forest Service deputy chief, Furnish draws greatly upon his own experiences in the agency to create a contemplative memoir that is as thought provoking as it is informative. Furnish joins us today to share his hopes for the future of forest stewardship in the United States. Several years in my case, made longer by being a forester, not a writer. The hurdle involved moving beyond stories and anecdotes to a real message. Our national forests, managed by the US Forest Service, have become a crucible for a hoped-for solution to the age-old question: Thanks to Teddy Roosevelt and other far-sighted conservationists, the Forest Service is blessed some might say saddled with the responsibility of managing our national forests: Decades of ambitious logging in these vast, natural forests clashed with a growing awareness of heavy environmental costs and citizens clamoring for an agency that cared more about the values of common people than timber industry profits. The crash yielded a dispirited, wounded Forest Service confused about the future. Humpty Dumpty could relate. I observed the growing animosity through an internal lens; I was actually one of those guys responsible for all the trouble. Yet, my immersion in the roiling waters of conflict left me troubled, colored, and ultimately changed to become, yes, an environmentalist. Because the Clinton administration sought leaders with a stronger land ethic, this personal transformation resulted in my promotion to become a high-ranking deputy chief in , a cherished honor. How strange though, after a year career, to then find myself persona non grata and leaving the agency I loved for reasons of principle. Environmentalists turned increasingly and successfully to the courts for redress, which imposed severe restrictions on logging public lands. The Forest Service seemed lost, floundering to fashion a future. My memoir relates the journey from despair to hope, building a new forestry paradigm based on restoring naturalness to a landscape. We turned our focus to improving water quality, fish and wildlife habitat, and recreation opportunities, rather than simply producing wood products. The environmental community â€" former foes â€" enthusiastically supported the changes. The timber industry, whose supply of wood was much reduced, accepted a different and smaller role. For the first time in decades, the timber wars ceased. I speak hopefully of a different and better future, a future that stewards forests humbly and respectfully to sustain their inherent functionality and worth. How much are our public forests worth? Far more than money. I contend they are priceless. He has served in a number of leadership positions within the agency, including a stint as deputy chief and supervisor of Siuslaw National Forest. Passionate about the protection of forested lands, Furnish was instrumental in creating the Roadless Area Conservation Rule and garnering support for a restorative policy over timber production in the Siuslaw National Forest. You can purchase his new book, Toward a Natural Forest, here.

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4: Lab 7: Future of the Forest

The Forest Service seemed lost, floundering to fashion a future. As supervisor of Siuslaw National Forest on Oregon's coast, I confronted an organization in free-fall with no viable vision. My memoir relates the journey from despair to hope, building a new forestry paradigm based on restoring naturalness to a landscape.

We see it in the record-breaking floods from storms like Florence, and in the record-breaking fires across the US once again this year. But the media â€" which barely mentioned the link between these catastrophes and climate change -- is preparing to move on to the next new, new, thing. Trump and the Republicans are providing enough fodder to feed a thousand news cycles with daily outrages that keep the country on the edge of chaos. Back in , in an article in the Baltimore Sun , I warned that the rapid warming in the Arctic had the potential to release methane from clathrates and permafrost, speeding up the rate and extent of warming. Now, rapid is a relative term in geology. Something on the order of a thousand years is the blink of an eye gauged against geologic time. And both these events took centuries to unfold, and eons to reverse. For example, during the PETM warming, unusually intense and sustained volcanic activity was releasing about 0. Hothouse Earth is not a planet compatible with the world humans evolved in, nor is it capable of sustaining civilization as we know it. For example, under the Hothouse Earth pathway, sea level would ultimately rise by as much as 60 meters about feet and stay that way for millennia. This would inundate virtually every coastal city in the world, and displace close to 3 billion people. And these billions of refugees would come on top of others already displaced by heat, drought, disease, storms, hunger and the political unrest they would cause. People pointed out that two degrees was too high to avoid feedbacks, that the measures were voluntary, that fully implemented it would still allow temperature increases of 3. All legitimate, all deeply concerning. And the fact that countries are now behind in terms of meeting their targets shows these concerns were valid. But the use of carbon budgets may be the least understood and most serious flaw in the Agreement â€" in fact, carbon budgets are the basis for all IPCC forecasts and they expose us to extraordinary risks. But first, a word about risk management. Typically, if the consequences of something are irreversible, ubiquitous, and catastrophic, we use extremely conservative safety factors when we design something. For example, airplanes and bridges are engineered with huge margins of safety and a lot of redundant systems. They are as close as we can come to fail-safe. Carbon budgets are established to determine the maximum amount of GHG we can emit, and for how long, to reach a given atmospheric level of GHG concentrations needed to limit warming to a given temperature increase. In establishing carbon budgets, the IPCC used a series of probabilities for staying below the target temperature of 2 C 3. The probabilities they used were a 66 percent likelihood of meeting the target, a 50 percent likelihood of doing so, and a 30 percent likelihood. What this actually means is that 66 percent of the models forecast temperatures below the target level, or 50 percent of them do, or 30 percent of them do. Now, think about this for a moment. Would you board a plane with a 33 percent chance of crashing? Cross a bridge that has only a 66 percent chance of holding up? So, higher odds of success require lower carbon budgets and give us less time, lower odds of success allow more carbon to be released over a longer time. If we wanted to have a 66 percent probability of staying below 1. By the end of , we burned through all but about billion tonnes of that budget. Since we are emitting about forty billion tonnes per year about forty-four billion US tons , we will blow through the budget in If we were to choose a more rational level of risk management, such as a 90 percent or percent likelihood of preventing global Armageddon, we would have had to start acting a couple of decades ago, since we exceeded those limits in Playing craps with the planet we live on isâ€"to say the leastâ€"irresponsible. So the press ignores it; and we drift happily towards a rendezvous with an ecological Armageddon. But this is so inside baseball, that almost no one understands it except those making and using the carbon budgets. Avoiding doom and gloom when the news was gloomy. Well, as the NAS study shows, some are beginning to. James Hansen, Kevin Anderson, Michael Mann and several others have been trying to tell folks the dire consequences of climate change for some time now. As I noted last year , when David Wallace Wells wrote The Uninhabitable Earth â€" a truly worst case summary of what our world was becoming -- he was roundly criticized by scientists for spreading doom and gloom. Aside from one error about

the magnitude of warming that melting perma-frost might cause, Wallace-Wells article used plausible worst-case forecasts to paint the picture of the world we are heading toward. And as the Scientific American noted, when you ground-truth past forecasts against what actually happened, the best fit comes from using worst-case or even worse than worst-case forecasts, so he was on sound ground. Yet such was the blow back that Wallace-Wells has been taking a much softer and more optimistic tone lately. I call Bullshit on the anti-doom and gloomers. Again, standard risk management strategies suggest we use the utmost caution â€" which is to say, assume the worst, and spare no expense in adopting policies which will prevent an outcome that is potentially ubiquitous, cataclysmic and irreversible. Nothing, with the possible exception of an all-out nuclear war, fits that category better than climate change. But because of what James Hansen calls scientific reticence, scientists have been reluctant to raise alarms, and when they have, many were not particularly good at it, couching there concerns in the careful language of science. Neoclassical economics provides a convenient excuse for inaction. Ever since Hansen delivered his testimony before the Senate on the threat of climate change in , economists and deniers using economic arguments, have been telling us that taking action to prevent climate change is too expensive. This was never a credible argument, given that what was at stake were trillions of dollars of real estate, hundreds of millions dead, loss of priceless habitat, mass extinctions, epidemics, unprecedented drought, spreading pestilence and widespread famine. But the conventions of economics â€" especially the practice of discounting future benefits â€" grossly undervalues the benefits to future generations from present expenditures. That is, economic analyses tend to conclude that money spent today to protect future generations is rarely worth it. A boring thing you should know about, with otters! In fact, Kahneman won the Nobel prize in economics for his work showing the fallacy of the perfectly rational agent. Economists chose to make simplifying assumptions about human rationality so that they could create elegant and often quite complex mathematical models about how the economy works â€" something another Nobel prize winning economist, Paul Krugman, called mistaking beauty for truth. It never made sense to argue that tackling climate change would impose a net cost on society to avoid the most expensive catastrophe in human history, but now that renewables are the cheapest source of power , arguing against climate mitigation and propping up fossil fuel investments hurts the economy and costs us jobs today â€" right now. If past is prologue, the media will soon move on, leaving the greatest threat humanity has ever faced virtually uncovered. As the flood waters recede, and the smoke covering the western United States dissipates, what little coverage climate change gets in the media will slow to a trickle. But the consequences of the inside-the-beltway political games, interesting as they are, pale in comparison to the consequences of ignoring or underestimating the consequences of climate change. An ecologically viable planet capable of sustaining civilization is, after all, a prerequisite to all the other games humans play. This is the world we cover. Because of people like you, another world is possible. There are many battles to be won, but we will battle them togetherâ€"all of us. Common Dreams is not your normal news site. We want the world to be a better place. If you can help todayâ€"because every gift of every size mattersâ€"please do.

5: Harbingers: Florence, Forest Fires, and the Future

The future of the forest: County adopts new forest management plan By Matthew Liedke on Aug 19, at a.m. BEMIDJIâ€"Beltrami County has a new set of guidelines to manage more than ,

With the forest industry expanding in Alabama, we wanted to gain further insight into this trend from an expert. Muehlenfeld has worked in the forest industry for 45 years. After receiving a forestry degree from the University of Missouri and a graduate degree in business from Georgia Tech, he worked for 16 years in private industrial forestry, 23 years in academia with Auburn University, and 6 years in state government at the Alabama Department of Commerce. What opportunities does Alabama have in the forest products industry compared to other states? What does Alabama have to offer that other states do not have? Alabama has the benefit of a very strong timber resource base, where available growth greatly exceeds current harvests. That means there is a significant volume of wood resources that can be made available on a sustainable basis. Forest products at the Port of Mobile. Other attributes that Alabama offers include a good geographic location relative to U. We have an excellent transportation network of highway, rail, and navigable waterways. In your experience, what are companies in the industry looking for that might attract them to our state, outside of our natural resources and geography? Alabama has a great workforce and a tradition of understanding and appreciating the forest industry. These are important attributes that are less prevalent in many other states, and are highly valued by prospective investors who need to have a comfort level that their manufacturing operations will be welcomed additions in their respective communities. Alabama offers a very pro-business environment. We welcome industry with substantial support and assistance, low taxes, right-to-work laws, minimal regulation, and constructive environmental permitting procedures. Alabama Power is a key player in that regard and a great attribute for the State of Alabama. Thank you for that. We certainly try to help our industrial customers and our state in any we can. Where do we stand currently? How is the industry impacting our state? There are 1, new jobs directly created with these investments. How does this impact other sectors? The indirect impacts of the forest industry are often underappreciated. The employment multipliers for forest products are quite good, generally 2. Additionally, most wood-consuming manufacturing operations will purchase all their raw material near their plant, usually within 75 miles, depending on the size of the operation. That can be a very large economic impact that generally stays within the region, benefiting landowners, loggers, and trucking companies. You were quoted in an article last year from Made in Alabama as saying the forest industry is on a prolonged upswing after a very severe industry recession. How is Alabama playing a role in this upswing today? What specific segments are contributing to the upswing? Ten years ago, the great recession the nation experienced was more like the great depression for the forestry industry. While most of the nation is playing catch-up, the South benefited because we have the lowest cost structure in North America and the strongest resource position. We have seen strong investment in many sectors, including pulp and paper, wood products, and secondary wood manufacturing. The investments in pulp and paper have largely been in upgrades and product mix changes at existing operations, and these investments enhance the competitiveness and secure the longevity of these operations. Within the wood products sector, Southern pine lumber manufacturing has been the product line with the most activity. Investment has been very strong, both for new greenfield operations and expansion of existing operations. I estimate that we will have added close to one billion board feet of new capacity when all the new announced facilities come on line. Board feet is the common measure of timber in North America. Almost all segments of the industry have been participating in the expansion. Looking to the near future, what can we expect from the forestry industry as it pertains to innovation and production, both locally and globally? We are likely to see a bit more expansion in the lumber industry, but I think there will be some rotation into other product sectors in the coming years, particularly in the areas of both structural and non-structural panels. This area has potential to complement our existing industry. The area of bioenergy, biochemicals, and bio-based materials also has significant long-term potential as the world tries to move towards more renewable resources. We have further to run in this upswing cycle. While we need to hang on to what we have, we also need to continue to remain competitive worldwide. I think

Alabama has the resources and the people to do just that.

6: Forest - Wikipedia

Working with partners like the National Forest Foundation (NFF), the Forest Service is discovering creative solutions to working more efficiently and effectively so we all can enjoy healthy, resilient, and productive forests and grasslands long into the future.

Tweet on Twitter About 4. The rest is held by state and federal governments, counties and other local municipalities. Each property is unique, and so is the way each is managed, State Forester John Seifert said. Ben Kibbey Some, such as Greene-Sullivan State Forest, are oriented more toward recreation, including hunting, he said. Others â€" like Yellowwood State Forest in Brown County â€" have multiple uses, including hiking, boating, camping and timber harvesting. Jeff Stant, executive director of the Indiana Forest Alliance, said there was a change in how the forestry division went about managing state forests after Seifert took charge in That included allowing logging in areas of Yellowwood and Morgan-Monroe State Forests which previous state foresters had set aside. Stant said the IFA is concerned that logging in state forests is being driven by profit goals. He said he believes the DNR views forests like a farmer views cornfields. Yet, there is no profit motivation in decisions to cut trees down on state land, he said. But the management plans created by state foresters are what decides where and when harvesting happens, not what the budget says, he said. Those guides take into account the trees present in the canopy and the saplings sprouting below. They also consider the animal habitat and foraging opportunities that are provided by dead trees which have grown to full age and fallen over on their own, said Jim Allen, Yellowwood State Forest property manager. Stant said that there is no reason trees need to be harvested before they die naturally. Those that do die naturally return nutrients to the soil and create openings for new growth, he said. Seifert said that currently, the number of trees being harvested in state forests is significantly less than what is dying off â€" particularly as the DNR deals with problems such as the emerald ash borer that is killing ash trees. There are varying opinions even among scientists concerned with the flora and fauna of forests, Casebere said. The forestry division is currently conducting a year study in conjunction with Purdue and other universities called the Hardwood Ecosystem Experiment. Its mission is to study various forest management practices and their impact on plants and animals. Only about seven years in, it is difficult to draw any conclusions so far, Allen said. If the division takes in less revenue than it has budgeted for a fiscal year, it only spends as much of the budget as there is revenue to fund, Seifert said. That fund is where money made from state forest camping fees, gate fees, timbering, nursery sales and other fees is deposited. It is quite possible that future visitors to state forests will see more gates with fees to be paid than they did in the past, Seifert said. Most other things the division could charge for â€" such as camping â€" already carry a fee, Seifert said. However, it is possible those fees could be increased if needed. If fee increases are tied to decreased timbering, Stant is all for it, he said. He would rather see the General Assembly provide more funding to the division to replace timber revenue, but he said fees offer a funding option regardless what legislators do. State parks and state forests both offer recreation such as camping, hiking, fishing, mountain biking and horseback riding. Both have conservation as a portion of their mission. But the activities permitted on them differ. Logging and hunting are permitted on state forest land but prohibited at state parks and reservoirs. The only exception is an annual hunt at select parks and reservoirs to reduce deer populations. State parks do practice some forest management through controlled burns, but no wood is harvested from state parks and reservoirs. Park land and forest land also differ in size. State parks and reservoirs span about , acres of Indiana â€" about 50, more acres than state forests do. Yellowwood State Forest holds about 24, acres of land and water spread out in various parcels across the western half of Brown County. With three manned gates, visitors to the state park can make no mistake about where they are. But it is entirely possible to drive or walk through a portion of Yellowwood and never know it. But with gate fees being considered for state forests â€" and their clientele changing â€" the differences between state forests and state parks may become less noticeable. Since Allen started working at Yellowwood in , he said he has seen a decline in visitors to the state forest, and a shift in what those who do visit want. Twenty years ago, the primitive campgrounds would be packed with campers on fall weekends, he said. Now,

there are more unoccupied than occupied sites most weekends. Some state forest properties already have cabins, and there are plans to bring them to Yellowwood, too, Allen said. However, those are not comparable to the cabins at state parks; forest cabins would only have electricity and bare bunks with no mattresses provided. The two roads connect Yellowwood Lake and several camping areas in the state forest to state roads 46 and Portions of Yellowwood Road that are currently paved will get a new overlay, some curves in the road will be altered and the bridge that spans Salt Creek will be replaced. A gravel portion of Yellowwood Lake Road also will be paved, ending at the northern end of the lake, and culvert crossings will be added where vehicles now have to drive through sometimes-moving water. Though the Indiana Department of Transportation had discussed installing culverts this fall, no road work is slated to begin until spring. Opponents have voiced concerns that the road work will lead to increased traffic, which will disrupt the way of life of residents along the road. INDOT has addressed some concerns, such as changing plans for a curve that would have cut substantially into the property where Mark Cagle lives. However, Cagle and other residents remain critical of the need for changes to the roads through the state forest. The roots of forestry When the forestry division was conceived at the turn of the last century, its mission statement focused on forests as a natural resource. That remains a core mission of the division, State Forester Jack Seifert said. In Brown County, much of the land that is now forested was completely clear-cut in the late s. Forest preservation efforts began in , when the state offered tax incentives to private landowners for maintaining forested land. It was used primarily as a forest laboratory and demonstration area, and later, as a nursery. More than a century later, the division of forestry manages state forests and assists private landowners with information on forest management. Forest studies underway Ecoblitz is a partnership of the Indiana Forest Alliance and other environmental groups to inventory flora and fauna in a acre tract of Morgan-Monroe and Yellowwood state forests: Actively manage state forest holdings with professional leadership in accordance with accepted scientific and forest certification standards for timber, wildlife habitat and historically or ecologically significant resources. Conserve and manage wildlife habitats, cultural resources and high conservation value areas. Conserve important lands through strategic acquisitions, active resource management and boundary line management. Improve the state forest recreation user experience by bringing water, wastewater treatment, camping sites, trails, education centers, lakes and other related capital assets up to market expectations. Provide forest-based recreational opportunities on appropriate state forest lands â€” in particular, primitive cabins. Provide information to the public and develop an improved process to determine public attitudes, needs and desires. Evaluate and modify administrative procedures and organizational structure to improve management efficiency. Read the entire report at in.

7: Lab 7: Future of the Forest

Students return to the issue of the declining maple syrup production. Using their knowledge of the relationship between climate patterns and biomes, they predict how climate change will alter the maple syrup industry and use modeled temperature and precipitation data to select an ideal habitat range for sugar maple trees.

8: Women leaders protect the forest and the future | Oxfam America

The annual payroll from forest products employment is estimated to be $ billion, and the value added from manufacturing is estimated at $ billion. Additionally, most wood-consuming manufacturing operations will purchase all their raw material near their plant, usually within 75 miles, depending on the size of the operation.

9: The Future of the Forest Service - American Forests

Bouathong Sengchan (right) gathers wild fruits in the forest with her daughter. Bouathong has been the chief of Ponemani village since Photo: Savann Oeurm/Oxfam In southern Laos, Oxfam's partner helps a small village conserve their natural resources and the forest that sustains them. The news.

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