



Michigan
Technological
University

SCHOOL OF FOREST RESOURCES AND ENVIRONMENTAL SCIENCE

RE:GENERATIONS

FALL 2017

COMMITTED TO OUR FUTURE STUDENTS, CURRENT STUDENTS, AND OUR ALUMNI.



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A message from the dean

DEAR ALUMNI AND FRIENDS,

There are lots of exciting things transpiring in the School of Forest Resources and Environmental Science (SFRES) at Michigan Tech and we are pleased to highlight just a few of them in this edition of our newsletter, Re:Generations.

I will note that change is in the wind as Glenn Mroz, former SFRES faculty member and dean, will leave the presidency at the end of the current fiscal year (June 30, 2018) after 13 years in that position. It is certainly the case that Michigan Tech grew considerably in stature during this period. Time will tell as to what a new presidency will bring us, but history tells us that it will not all be the same. Our task in the months ahead is to position ourselves to deal with this change, sort of like adaptive management.

In this regard, the most recent rankings of natural resources and conservation programs reported in a special issue of *USA Today* place us at No. 5 among the 80 major programs in the country. What's perhaps most remarkable is that all the other institutions in the top 10 are three-to-five

times our size and are land-grant institutions that receive more funding from their respective states.

A major financial challenge for us continues to be the Ford Center and Forest. It is classified by the University as a "quasi-auxiliary unit," which means that the central administration contributes some funds for our operations there, but not the full amount needed to balance the budget. Thus, we have been working hard to increase the use of the facilities there for teaching, research, and outreach.

In the area of research, we have just obtained a major grant from the USDA-NIFA to study alternative silvicultural methods in northern hardwood forests aimed at increasing biodiversity. Assistant Professor Yvette Dickinson, who is leading this effort, is featured elsewhere in this issue. Complementing this study is one led by Assistant Professor Matt Kelly, funded by the USDA-NRCS; the study looks at road-surfacing technology to protect soil and water resources in these forests.

Finally, in the area of outreach, we have made major inroads into offering wildland experiential education programs for teachers and K-12 students, through collaborations with entities such as the Michigan DNR, Department of Defense, Boy Scouts of America, and Great Lakes Indian Fish and Wildlife Commission. A major objective of these programs is to attract students into careers in natural resources, with an emphasis on diversifying our student body in SFRES.

Henry Ford created the village of Alberta in the 1930s as a working community designed to produce materials for his "woodies" using responsible forestry practices. As most of you know, the village and surrounding forests were deeded to Michigan Tech more than 60 years ago to carry on this tradition through teaching, research, and outreach. Fast-forwarding to the present, we are actively engaged with the Bio-based Materials Research Group at Ford Motor Company to develop renewable materials for use in the auto industry. Much of this involves investigations of

◀ **On the Cover:** Breathtaking views during forest ecology class

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wood at the subcellular level for producing an array of parts with special qualities where light-weighting (for fuel efficiency) is of major concern, coupled with strength, heat resistance, and cost of production. We are also investigating chemicals emitted from forests that are linked to human health and may someday be incorporated into the interiors of automobiles. This is all part of Michigan Tech's Forest Biomaterials Initiative, which began four years ago and has been featured in previous newsletters.

In closing, I want to thank all of our alumni and friends who have contributed to our well-being in so many ways over the past year. Advancement Director Erin Froese and I visited with several of you in the Pacific Northwest (Oregon and Washington) this past June, and we were impressed by the fond memories you have of Michigan Tech and the School of Forest Resources and Environmental Science in particular, and your concern for the future of our School.

Ferry Adhark

► Greenhouse Management class learning to care for tree seedlings





YVETTE DICKINSON

Assistant Professor of Silviculture, SFRES

Managing Forests for the Future

Nearly everyone loves a generous helping of maple syrup on their Saturday morning pancakes. But managing a forest solely for sugar maples to make more maple syrup denies the ecosystem vital biodiversity and may damage wildlife habitat.

Rather than managing a forest for one species, what do forest ecosystems look like when managed for a multitude of factors? That's the question Yvette Dickinson, assistant professor in the School of Forest Resources and Environmental Sciences, along with co-principal investigators Chris Webster and Robert Froese, seeks to answer with the United States Department of Agriculture-funded study "Northern Hardwood Silviculture Experiment to Enhance Diversity" (NHSEED).

"The overall work we're doing down there is looking at developing new sustainable ways of managing northern hardwood forests for timber production as well as the other great things we use forests for—wildlife habitat, protecting soils, clean water and air, recreation, and aesthetics," Dickinson says. "Are there other ways of managing northern hardwood stands that are sustainable that allow regeneration of other species as well as sugar maple?"

The motivations behind the study at the Ford Forest in Alberta, Michigan, include combatting the effects of climate change, which will be more detrimental to single-species forests, and to fight invasive species like the Asian longhorn beetle. Though the beetle has not yet taken up residence in Michigan, it is affecting Ohio. Should the beetle arrive in Michigan, it could decimate sugar maple-dominated forests that lack diversity.

As the saying goes, don't put all your eggs in one basket; greater biodiversity means greater resilience.

Beginning this past winter, Dickinson and her co-PIs began conducting a nested hierarchy of treatments which include:

- Reducing the forest canopy and increase light in the forest with
 - o Single-tree selection: Typical forest management that cuts few trees scattered throughout the stand.
 - o Shelter-wood cutting with high and low density of trees: Cut smaller trees but not all the trees. The goal is to create conditions that have higher light than under an intact canopy, but still offer some shelter and

shade for seedlings as well, or

- o Patch clear-cutting: In certain areas, provide seedlings the most light they could possibly receive by removing all mature trees in these patches.
- Artificially tipping up stumps, and mechanical scarification of the soil to reduce competition from other vegetation and expose soil
- Small, fenced areas to exclude deer and prevent browsing
- Spreading a mix of tree seeds broadly, the trial mixes and matches the treatments so all possible combinations are included.

The purpose of the nested treatments is to figure out which combination creates the highest diversity situation while factoring in the time and energy invested to determine the most efficient management method.

The greatest asset of the Ford Forest is that beyond the NHSEED study, other researchers are able to conduct simultaneous studies with long time scales.

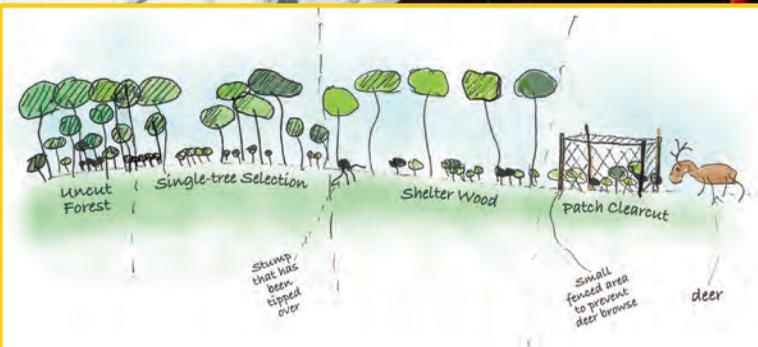
"Yvette's project—it's what we do," said Robert Froese, associate professor and coordinator of forest planning

and research at the Ford Center and Forest. "It's showing the value of our programs to outside funding agencies. It provides education opportunities—she has a graduate student and three undergrads working there this summer. It's been immediately leveraged by other faculty."

Matt Kelly, assistant professor, is in the process of receiving a grant from Natural Resource Conservation Service to conduct a study about reducing erosion caused by logging equipment on forest roads, using roads in Yvette's trial.

Curtis Edson, assistant professor, is using hyperspectral and LIDAR data to test new methods in remote sensing for categorizing and inventorying forest structure and forest change.

"Increasingly, we're thinking about what's going to happen to the forests in the future," Dickinson says. "Climate change and invasive species are two really big issues that are going to get worse. We need to collectively manage for them. This project is informing us of ways to deal with those problems. The further we get into the future, the more big-scale problems we'll have. It's research's role to inform people how to make those decisions."



► A cross section of the nested treatments of Dickinson's forest diversity trial



Munkaila Musah helps haul sap.

The flamed, pheremonal connection with maples

MUNKAILA MUSAH | PhD student, Forest Molecular Genetics and Biotechnology, SFRES, Michigan Technological University

I was born in the forest and grew up with plants from the tropical rainforest. I felt good with nature. Little did I know how deep I was rooted in this connection until my first experience with a maple tree in October last year when I arrived in the US. I felt a flame of unlimited excitement with the aesthetic beauty of four mixed colors on the same tree that slowed my heartbeat and recalibrated my affinity for nature.

This enthrallment excited my curiosity about this North American hardwood; I wanted to dig beyond the magnificent beauty that outshone other trees and triggered a stream of unlimited consciousness.

I then met Jerry Jondreau, recruiting director for SFRES, who introduced me to the Ojibwe culture. He shared the Anishinaabeg (original peoples) history of the region and traditions associated with sugar maple trees. I introduced myself to the sugar maples outside his house in the traditional fashion and offered my tobacco and good intentions. The rich satisfaction of understanding the nature of the maple tree kept me rooted in my quest of knowing: Trying on my first pair of snowshoes, walking in the snow to the maple trees, fixing the bag for collection, my first touch of the spile or tap, drilling and installing the spile in the tree, the hammering and attaching the collection bag to the spile.

I was dazed when I returned the next day to see the once empty bags bloated with sap and some almost filled to the brim. I had my first taste of the lightly sweetened sap as we collected almost 250 gallons. I thought it was too much sap but little did I know about the rule of thumb, 40 parts maple sap produce one part syrup (meaning 40 gallons sap = 1 gallon of syrup). I finally got the chance to boil the sugar with an irresistible smoke scent, and made some syrup and sugar with the Jondreau family. I say Migwiich! (It means thank you in the Ojibwe language.) I was thrilled with this discovery. My interactions with the maple tree offered fulfilment besides the exhilaration of discovery of true beauty with benefits from Mother

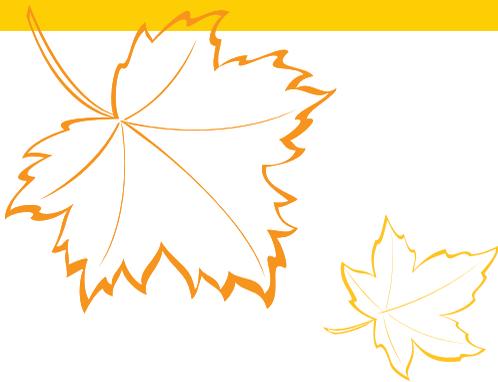


ASHLEY BERTON

Finding a passion in wildlife and the outdoors

Like many people, senior Ashley Berton finds it hard to admit that her dad was right. As long as she can remember, Ashley's father, a Michigan Tech Mechanical Engineering alumnus, had suggested that Ashley attend Michigan Tech. However, Ashley had aspirations to attend St. Norbert College and pursue a career as a professional singer and pianist. After a year at St. Norbert, she found her major was not satisfying her scientific side. She decided to take her father's advice and transfer to Michigan Tech's engineering program. Ashley soon realized that a career in engineering would not provide enough opportunities to work outside, so she moved to SFRES to major in Wildlife Ecology and Management. Ashley immediately knew that she found her niche.

SFRES lab classes immersed Ashley in the field, and she found herself in the company of people who were just like her. While she still sings and plays piano, Ashley says that SFRES "allowed me to find my passion for a career in wildlife and the outdoors." Ashley takes full advantage of Michigan Tech's surroundings by kayaking, mountain biking, rock climbing, and camping. This summer, Ashley is working with Andy Burton on his nitrogen gradient project. She has enjoyed the combination of field and lab work involved with research. After graduation, Ashley plans to hike the Appalachian Trail and then pursue research on elk populations and migration patterns. It may have taken a while for Ashley to realize that her dad was right, but she is very happy that she listened to her father, and so are we!



Nature. I later learnt that maple syrup is one of the sweeteners that can be used in small amounts as a good alternative to cane sugar. It has a lower glycemic score; maple syrup raises blood sugar levels less than table sugars. I researched other benefits and realized that contrasting it with other sweeteners, maple syrup contains higher levels of beneficial nutrients, antioxidants, and phytochemicals than white table sugar or high fructose corn syrup. This tree is a blessing of nature to the Ojibwe and Yoopers alike. Take a moment to visit the trees, interact with them, enjoy their gifts, and you shall leave to testify as I am doing today. Baamaapii (see you later)!

A chance encounter leads to career in forestry



One day in September 1948, I was walking home on Lake Street in Miller, Indiana, a small town at the southern tip of Lake Michigan. I happened to pass the local sporting goods store and noticed a sign posted in the window that invited sportsmen to a chapter meeting of the Isaac Walton League of

America, a national conservation organization. Interested in what I might learn, I decided to attend the meeting.

As I recall, about a dozen members were present, and by chance I got into a conversation with one them, Jack Ojala, who at the time was assistant

superintendent of the No. 5 Open Hearth at U.S. Steel's Gary Works (Ojala knew my father, and Dad knew him). After some polite talk about hunting in the nearby Miller Woods, Ojala asked me what I planned to do after graduating from Wirt High School. I responded, "I don't know, just thinking about it." He

asked if I had considered going on to college and majoring in forestry. He then recommended the Michigan College of Mining and Technology, where he had majored in metallurgy. He also said that Michigan Tech had an excellent department of forestry.

The word 'forestry' evoked a mental image of work in an outdoor, wooded environment, like the Miller Woods, which I knew so well. However, I had no conception of forestry as a field of study or occupation. In fact, I had not even heard the word forestry before, spoken or written, until my conversation with Jack Ojala. I let the matter rest, as graduation day seemed far off.

Months later, in February 1949, on a cold, dreary winter day at home, I decided to hike through the Miller Woods, a tract of about 1,500 acres of black oak trees, ponds, and sand dunes (now part of the Indiana Dunes National Lakeshore, but at the time owned by U.S. Steel). I donned my warmest coat, told Mother of my plan, left the house, crossed the New York Central Railroad line, and entered a familiar trail heading north toward Lake Michigan. At a trail junction I turned west and followed the Little Calumet River to the crest of a hill overlooking the steel mill complex of blast furnaces and open hearths, where my father was at work that day.

I studied the smoky haze hanging above the mill and pondered a question lingering in my mind: What will I do after graduation in June? I recalled my conversation with Jack Ojala and Dad's comment about the importance of a college education. I turned and looked back into the Miller Woods, even in winter, serene and beautiful.

I REALIZED THEN THAT THE HILLTOP ON WHICH I STOOD DEFINED A SYMBOLIC BORDER BETWEEN TWO DIFFERENT FUTURES: ON ONE SIDE THE STEEL MILL, AND ON MY SIDE A NATURAL ENVIRONMENT OF WOODS AND WILD PLACES.

I decided then to enroll at Michigan Tech to earn a degree in forestry.

I hurried home to Duneland Village eager to share the news with my parents. Mother was home working in the kitchen; father was finishing his shift at the mill. Upon hearing of my plans, Mother looked surprised and dubiously exclaimed, "Why Dennis, we can't afford to send you to college." I explained that I had saved sufficient funds to pay for most of the first year, and that I would continue as long as I could with my own money, including summer work at the steel mill. Dad's response was a simple, "Well, it's OK with me." Mother eventually came around and they never wavered in their

willingness to provide financial help if my savings ran out.

And my savings did run out annually during my four years at Michigan Tech (1949 -1953). The pinch came about halfway through spring quarters, and in years when required summer session courses precluded a full summer of work at U.S. Steel.

However, my aspiration to earn a degree became a family venture that my parents, grandparents, uncles and aunts supported with cash gifts. I also trapped muskrats in the Miller Woods swamps during winter breaks and sold their pelts in the Chicago fur market.

A job on campus as a student assistant in the department of forestry made it possible to finish my senior year and to graduate with the class of 1953.

In 1994, I made a gift to Michigan Tech to establish an endowed scholarship, eventually named the Michigan Technological University Alumni Endowed Scholarship in Forest Resources Management and Conservation. I made the gift in the hope that it would help a forestry student through the financial thicket of winning their degree at Michigan Tech. I purposely used the word "alumni" in the name in the hope that fellow alumni would join me in the cause.

-DENNIS E. TEEGUARDEN '53

You can donate to the Michigan Tech Forestry Alumni Endowed Scholarship at:

[▶ mtu.edu/forest/giving](https://mtu.edu/forest/giving)



Family socials were a common occurrence at Otter River Cabin.

MEMORIES OF THE OTTER RIVER CABIN

ALUMNI SHARE THEIR RECOLLECTIONS OF A SPECIAL PLACE

I can't overstate how important the cabin has been to me over the past 23 years or so. As a student, I spent many days and nights there, among the brilliant fall colors, the green of spring, and the coldest of cold the Keweenaw had to offer, sleeping on mattresses huddled up as close to the stove as possible. After graduation, I was fortunate enough to return to the cabin with friends and family on several occasions.

Eight years ago or so, I settled into a routine: every two years, I bring my band up to the cabin to write music, do a little recording, and of course, do all the other things that the Otter River Camp tends to inspire—fishing, hiking, exploring, sauna-ing, playing cards, and yes, even consuming a few adult beverages. Before my first trip with the band concluded, everyone was as in

love with the place as I had been for decades, and we decided to rename our group "Otter River."

So, that's my story. Simply, it's a place I have loved dearly and will miss terribly. But I certainly understand the need to move on. Over the decades, I've watched some things improve at the camp, while other, more critical things continued to degrade, without a clear repair option available. I was very encouraged by the statement in the last SFRES newsletter that "only one thing can meet [the students'] needs: a four-season cabin." The same could be said for classic country bands that like to record there occasionally.

Thank you for all that you do, and for recognizing the value that a place like that has, and for taking the necessary steps to ensure its value continues



to be appreciated for future generation of students and alumni.

**–ANDY HENRIKSEN '96,
STATE FORESTER, NATURAL
RESOURCE CONSERVATION
SERVICE**

In the 19070s, an old homesteader named Hap Preston told me, "Keep a roof on a log cabin and it will last more than 100 years." He lived in a 16-by-24 log cabin he homesteaded; his wife lived in a house. And we kept a roof on the cabin. I respect the FPL engineers' opinion; that said, there are many living quarters they might declare unsound.

Unless we could find a benefactor with some pretty deep pockets, a new cabin up to code for students could be

out of the question. At the same time, I'd want to see if it were possible to raise the funds. Any idea of how much we are looking at? And I am not sure "The Camp" means that much to students nowadays. We sure thought it was special.

–BOB PADDOCK '61

I am a class of '72 alumnus (well, actually, the extra terms made it '73) who spent many days and nights at the Otter River Camp, including building the sauna. (That could explain the extra terms). It is sad to hear the old girl is deteriorating beyond repair but expected considering her age. I am partial to replacing her with a log building with the same layout and features the old cabin had.

I know this would be a large undertaking but there should be

many of us retired individuals with building skills who live close enough to donate time to the project. Some may even vacation for a week or so to add their talents. It may be possible that some alumni could donate logs from land they own. I have some red pine that may fit the bill depending on specifications. There may even be alumni in the business of log homes who could furnish design and guidance. Why don't you send out a mailing to alumni and see what the response is? Ask them what skills they can offer or materials they could donate.

–WILLIAM "BILL" C. STEWART '72

I just received the winter Re:Generations publication, and while I don't look to the past, there were several points that created in me remembrances



of that time in my life living in Houghton and has created a rare nostalgic moment in me.

The first was the name of the artist who made the sketch of the Otter River Camp—is this person related to the past dean, Gene Hesterberg? The second was the article of the camp. And the third was the Memorial of Roswell K. Miller.

My time at the Forestry School was so filled with joy and enthusiasm. It started out on the first week of school during a Forestry School assembly; a shy, quiet, young man from Chicago was chosen to be one of the three students on the Student Advisory Council. I was selected by fellow students, who didn't know me and for heaven knows what reason, but it was a great adventure in talking with Gene a couple times that freshman year. I was then elected to Camp Committee Chair for the next couple of years.

Ros had the idea that during summer school, four of us and two from the Ford Center could stay at camp to do a list of projects in lieu of paying rent. This was so appreciated after I had won the lottery, at the time, for married student housing that was not fully occupied by married students and I was

then living in fairly cramped quarters for four young men sophomore year.

My oh my, living out at the camp was ever a highlight. Ken, Stacey, Al, and I (and the other two from the Ford Center) went through the list a little at a time. I had regular weekend obligations away from camp and so did not fully participate in all of the projects, but by the end of summer camp the list was complete. The two guys from the Ford Center were real outdoorsmen and would regularly return from a weekend of hunting, trapping, and fishing—at the end of the summer they had multiple sturgeon heads mounted on the dead tree branches leading from the parking lot to our summer home. And I acquired a beautiful beaver pelt from them.

That was also the summer I learned the diverse ways in which to trap mice. With each trap we attempted a more quiet method in order to allow us to sleep all night and also so we did not have to constantly reset the traps during the night! I don't know if this opportunity was offered for other summer camp seasons.

During my summer camp, I think that the professors and teachers

were mildly impressed because, as I remember, I was the first one to get a 100 percent on the Scaling exam.

I do not think anyone stayed at the camp the following year, since I was asked to return and help with "teaching" (a very strong word for what I did do) the following year's summer camp students. And over the years I am sure it was used regularly but I don't remember the camp being used much while I was at school; any Friday that I stopped in the office to get the keys they were always available.

During junior year, while still camp committee chair, Ros had acquired a functioning refrigerator to supplement the round top refrigerator that was at the camp, which we had used for the summer as mouse-proof cabinet storage. Al, a freshman, and I took the green truck used by the forestry school and loaded up the refrigerator to take to camp. It was an early fall Sunday, and as I rounded a bend, I caught some black ice and started to slide. The tires then grabbed on the loose gravel of the shoulder as we were going sideways, and I flipped the truck. We panicked because gas was leaking out and we all were trapped in the cab



upside down, in our seatbelts with too much pressure on them to get them released. We somehow got out and walked to the next house and called Ros, who promptly came out, as did the state trooper. While we stood there waiting for the tow truck, two other vehicles slid off into the ditch for the same reason. The truck was towed back to the forestry school and sat in the back parking lot for a while, to daily highlight my embarrassment. And needless to say, the refrigerator stayed in the pickup bed because it bore a lot of the weight of the flipped truck and was not usable.

I remember helping with the railroad rail bridge that Ros had designed to cross one of the side creeks into the Otter River. This must have been sophomore year because I used the green truck to go get supplies when we ran out of cement mix for the two caissons that supported the suspended rails with the wooded walkway between them.

I remember how happy Ros was the year we hosted the Conclave and how busy we all were getting ready for the events and the other schools coming. He and Bill Perkis, an upperclassman (who had a really cool black truck and black lab, and was married to an upperclasswoman) really scrambled around getting everything needed for the events.

As you can see, my experience at the forestry school is filled with remembrances of Roswell Miller. He had a great impact in my life during my time there. I truly appreciated him and the classes he taught.

—SCOTT STOREY '79

A generous donation to support the reconstruction of the Otter River Cabin was given in memory of Eric B. Mahringer '66 by his wife, Penny. The Otter River Cabin was one of the first places he shared with her when he first brought her up to Michigan Tech.

You can donate to the Otter River Cabin Fund at:

• mtu.edu/forest/giving/otter-river-cabin/ or contact Erin Froese at 906-487-2417 or emfroese@mtu.edu

THE TALE OF THE HANDHELD CALCULATOR

As we get older our memories begin to fade, but for some reason certain things stay with us as if they happened yesterday. One of these is the first time I saw a handheld calculator. It was the spring term of 1970, my sophomore year at Michigan Tech. As a part of our curriculum, we all had to take Introduction to Forest Surveying, a four-credit class that included a one-hour lab.

I can still remember Hammer proudly walking into the lab with a grin on his face as he began to show us his new toy, a handheld calculator. It was my first time seeing something that amazing, and judging by the reaction of my classmates, it was their first time also. I don't remember the brand, but do remember the calculator cost \$400 and it could perform only four functions: add, subtract, multiply, and divide. The only way to see the numbers was to look directly at the tiny screen. Amazing how much has changed since then! A similar calculator today would cost less than \$5.

—BOB CANAVERA '72

STATE CHAMPION RESIDING IN THE ALASKAN WILDERNESS



SFRES alumnus Thomas Witherspoon, second from left.

BY THOMAS WITHERSPOON, BSF '13 MF '14 | Forester, Sitka Ranger District

Collaborative efforts between the US Forest Service, Sitka Conservation Society, and the American Forests Champion Tree program resulted in the successful location and measurement of a hidden giant living deep in the South Baranof Wilderness of the Tongass National Forest.

Alaska's big tree coordinator, Don Bertolette, contacted the Sitka Ranger District in the fall of 2015 for assistance in coordinating a trip to the wilderness to measure the nominated Sitka spruce. Employees of the local Sitka Conservation Society had come across the tree on several trips to the South Baranof Wilderness and knew where to find it. The tree's location will remain classified in an effort to minimize foot traffic. Sitka spruce are a shallow rooted species and high levels of foot traffic can damage the root system.

Once it was decided to measure the tree, and to label the location South Baranof Wilderness, the focus turned to logistics. Waiting for schedules to align took nearly a year, and in August 2016, a five-person crew flew across Baranof Island from Sitka, Alaska, headed south towards the 375,000-acre designated wilderness. The US Forest Service

was conducting several remote surveys of reported campsites in the area presenting the perfect opportunity to track down the tree for an official measurement. The operation required two float planes chartered through Harris Aircraft Services out of Sitka. One plane was filled with enough gear for the group to overnight in the wilderness in case the weather changed. Having to spend a night in the field is not a rare occurrence in this part of the world, where weather conditions can change quickly, making float-plane travel dangerous. The second larger plane held most of the crew, shown in the photo above.

The hike to the tree took the crew along a highly productive salmon stream, through what could be called perfect brown bear habitat. Though no bears were spotted on the hike (likely due to the group making lots of noise on purpose for this very result), everyone was outfitted with bear spray on the waist and a pair of high power rifles were carried in case of a bad bear encounter. After about an hour of ducking, climbing, and bushwhacking, the group finally spotted the giant looming over its neighbors in the overstory. After taking a few minutes to rest and appreciate the truly massive

size of the tree, the crew got started with the measurement process. After all, they had a pair of float planes to catch that afternoon.

Per the American Forest Big Tree Measurement Guidelines, nominated trees are scored with a points system comprised of three parts. First is the overall height of the tree, second is the circumference of the tree at breast height (4.5'), and finally the average crown spread. The height is measured in feet, and this spruce measured 175 feet tall, earning 175 points for part one. The circumference is scored with each inch awarding a point. The giant spruce had a circumference of exactly 38 feet, earning it 456 points for part two. The crown spread is measured in feet, and then the points awarded are equal to 1/4 the crown spread value. A 62-foot crown spread earned the giant spruce 15.5 points for part three. The combined total for all three parts was 646.5 points, besting the previous Alaskan record tree by almost 100 points.

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It's about the people

Alumnus challenges students to use skills to benefit society



AARON EVERETT '01

Director of the Washington Governor's Office for Regulatory Innovation and Assistance

His time at the Washington DNR, during which he served as a forest health policy specialist, federal affairs liaison, and finally state forester, provided him with the experiences needed to become the director of the Washington Governor's Office for Regulatory Innovation and Assistance (ORIA).

"The DNR in Washington state is an interesting agency with huge breadth and depth of responsibility," he says, noting that the agency does far more than manage forest and agricultural lands. "You're not only involved in environmental

geologic hazards, land-use regulations and organizational management. He says his work for the DNR included understanding policy and procedure, the inner workings of how regulations are set, and the ins and outs of working with citizen and advocacy communities and regulatory communities.

At ORIA, Everett's role is to direct the agency that helps the public and business owners navigate the often-bewildering world of government regulations.

"We have worked on everything from Boeing's expansion of manufacturing operations, to e-commerce for small businesses, to wastewater treatment challenges with microbreweries in downtown areas, to building a successful platform and pathway for the restaurant sector in key cities. Every day is a new adventure."

But most important, he says, is the that the degrees the School of Forest Resources and Environmental Science grants go beyond equipping graduates with technical know-how. He said it's really about people.

"It's essential to remember that all of our work is about people," Everett says.

That's the most valuable part of the education—bringing those tools together in the service of something bigger. I encourage students to dream big. It's a time of great opportunity."

The casual observer may wonder about the path a person from Pontiac, Michigan, might take to graduate from Michigan Technological University with a degree in forestry and go on to direct a state agency across the country.

Alumnus Aaron Everett '01 has an answer.

"I knew graduating from Michigan Tech, wherever my career might take me, I'd prepared for the challenge of it," he says. "I got the world-class technical foundation in forestry I needed at Michigan Tech. But more importantly, if you can survive and excel in a challenging environment, it equips you to do anything you want."

Everett's career has taken him into the fields of environmental policy, forestry, and administration. He spent a number of years in Rapid City, South Dakota, working on environmental policy for a forestry association. From there he moved to the Washington Department of Natural Resources, a state agency he says touches nearly every aspect of life in the western state.

THE CHALLENGE IS TO BE LEADERS IN STRENGTHENING THE CONNECTIONS AMONG PEOPLE AND THEIR ENVIRONMENT AND SOCIETY'S NEEDS.

issues, you're also involved in issues like water and trade policy."

"We're skilled in the technical aspects of our field—biometrics, growth projections, silviculture, soil science—but those are skills we use in the service of achieving a benefit for people and society. Whether it's clean water or people being able to make a reasonable living, or caring for future generations."

Everett said his experience provided him with training in infrastructure development, emergency response, disaster preparedness, energy operations, public safety from



Data to decisions

Putting information into the hands of decision-makers



NAN POND '12

Lead biometrician, SilviaTerra

It might shock some forestry majors to learn that many jobs in forestry take place indoors rather than in the forests themselves. But a growing number of jobs in the forestry industry utilize high tech to make the work of the foresters on the ground easier.

Biometricians do just that. Nan Pond '12 is using her biometrics doctorate to conduct remote sensing-based forestry inventory projects.

"Within the US, the landscape of forestry has changed so much in the last few decades," says the lead biometrician for forestry inventory and biometrics firm SilviaTerra. "Being on the ground gives you the ability to establish a community to impact the forest. With the combination of remote sensing information, it gives us the ability to know more about forests that exist on a smaller scale."

Pond says that the future of forest resource management is the rise of small, contiguous parcels rather than massive forests owned by a single agency or company. And the future of the forestry profession includes the need for programming capabilities and the ability to

interpret satellite imagery. "Better data means better decisions," she says. "My PhD program gave me the opportunity to build the technical foundation—especially in terms of statistical coursework and learning to code, as well as the valuable skill of learning to teach myself—for the work I'm now doing. My field work allowed me to interact with representatives and the forest resources of the Michigan DNR, industrial, and small private landowners. Exposure to all of these different ownerships has helped guide the way I think about the clients I now work with—both public and private landowners with a range of goals and objectives."

SilviaTerra, which is based in California, has built both web and app systems to help foresters measure timber and receive automatic workup and summaries. Biometricians pair plot data to build inventory models, and from there build complete lists of trees within stands and develop rasterized maps that show basal area and volume within a property.

"The information our company works to provide sets people up to do more and know more about forests. It's change management," Pond says. "We are building a system that connects people that have land with people who are interested

in conservation or people interested in buying timber. We're trying to get better data into the hands of people who make decisions. Ideally, in the future we'll have a platform that guides (forest managers) to accomplishing management decisions. Getting the data is the first step."

Prior to working for SilviaTerra and completing her PhD, Pond served as a Peace Corps volunteer in Zambia doing forestry and agricultural extension work. She's most proud of the rabbit multiplication project she undertook while a volunteer, which provided female rabbits to locals to be used for breeding and meat.

It's her self-starter nature that landed Pond in the position she's in today.

"A big part of what I think has driven the success I've had so far is that I have been very self-motivated to learn how to use software that's available and to learn multiple coding languages," she says. "When you go into forestry it's because you want to play outside, but there's a lot of exciting work to be done indoors with the data we have available to us—historical information, remote sensing data, and up-to-date measurements. Being open to learning new skills and growing with the field is a key to success."



An update on the wolves of Isle Royale

Isle Royale National Park is one of the last remaining places on the planet where wolves, moose, and the forest itself all live without exploitation by humans through poaching, hunting, or logging.

In 1997, a wolf migrated to Isle Royale by crossing an ice bridge that formed during an unusually cold winter. Analyses of that event demonstrated that the immigrant had rescued the wolf population from severe inbreeding. But the benefits of that powerful genetic rescue were—as one would expect—short lived. That genetic rescue also reversed a decades-long belief that the wolf population had been genetically isolated and was free of inbreeding depression. It now seems the wolf population had been sustained by the occasional arrival of immigrants, which was made possible by the formation of ice bridges during most winters.

With climate warming, ice bridges are now rare and will soon be a thing of the past. They are too infrequent to expect that natural immigration would sustain the wolf population. Anthropogenic isolation took its toll between 2009 and 2016 when the population collapsed from 24 to two. The last two wolves are father and daughter as well as half-siblings. As of April 2017, they were seven and nine years of age—older than most wolves live. Since the wolf population began to collapse, the moose population has been growing at about 20 percent each year. The moose are expected to soon be

abundant enough to begin damaging the forest. A central value of the National Park Service (NPS) has been non-intervention—let nature take its course without interference from humans. That mission was developed a century ago, long before we realized we were racing toward global warming. The NPS does not have a well-developed sense for how to respond to climate change. In particular, we as an American people have not developed a common understanding of when we should protect the health of our national parks from climate warming, and if doing so is readily feasible. Public comments solicited by the NPS suggest that most people seem to think that restoring the wolf population would be a good thing because doing so is important for maintaining the park's ecosystem health.

In April 2009, the NPS issued a press release that said the park “will not bring wolves from outside to Isle Royale in the near term,” basing the decision on their review of the best available science, law, and policy. In December 2016, the NPS released a draft environmental impact statement (EIS), which indicated that the NPS had changed its view to a preferred alternative action to bring 20 to 30 wolves to Isle Royale over a three-year period. A final decision by the NPS is expected to be announced toward the end of 2017.

JOHN A. VUCETICH '94, '99
Professor, SFRES

For more insights on the topic, see John Vucetich's article on the topic in the July/August 2016 issue of Natural History.

► mtu.edu/docs/vucetich-2016-natural-history.pdf

The loss of a student becomes a force for good

A program to educate high schoolers about professions in forestry and natural resource management. A playground in the woods. A white oak to provide a shady spot for students to sit. All of these were done in honor of John Wheeler.

Wheeler was a fourth-year student at Michigan Technological University when he was killed in a car accident in November 2016. He had aspired to become a forester, and was cherished by family, friends, and faculty alike.

Terry Sharik, dean the School of Forest Resources and Environmental Sciences, reached out to the faculty who had John in their fall 2016 courses and asked that they turn in John's final grades, enabling Michigan Tech to posthumously award John his bachelor of science degree.

"He was extremely proactive and intelligent as a student. He was a real leader in our group," says Matt Kelly, an assistant professor of natural resource management, who had John in several courses, including senior capstone. "His peers talked at our memorial about his fieldwork; he was always trying to do it faster, more efficiently, and more effectively."



John Wheeler's father helps plant a white oak on the SFRES memorial hillside, along with some of his son's ashes, while students gather to add soil to the hole in honor of John.

KIDS IN THE WOODS

Just as John pushed himself, the SFRES and wider area communities wanted to do more to honor John's memory and commitment to his future profession.

Sharing his love of the woods was a passion. John made time to reach out to students at Houghton High School to encourage them to pursue a degree from SFRES, and to work in the after-school program at Houghton Elementary.

To continue John's mission to share the possibility of a

career in forestry or environmental sciences, shortly after his death the John H.F. Wheeler Memorial Fund project was established on Superior Ideas, a crowdfunding website operated by Michigan Tech, including a \$5,000 match from SFRES.

To date, the fund has raised \$12,960 toward a \$35,000 goal, which will create an endowed fund that will provide financial awards to upper-division undergraduate students in SFRES.

Award recipients will serve as ambassadors to local and regional high schools to talk about natural

resource careers and share their experiences in SFRES.

"It's for the college kids to go to the high school and talk about [careers in forestry]. That was John's idea," says Bob Wheeler, John's father. "He said that there should be more connection for natural resource education in the high school."

The School of Forest Resources and Environmental Science would like to thank Weyerhaeuser for its \$500 donation toward the John H.F. Wheeler Memorial Fund, as well as the other generous people who donated.

IN MEMORIAM



RICHARD LITTLE '54

Richard passed away on March 4, 2017, in Sheboygan, Michigan. His wife shares memories of his love of forestry—Richard planted several thousand seedlings on their property in Illinois and when their youngest daughter was married, they gave each guest a pine tree seedling to be planted in remembrance of the wedding.

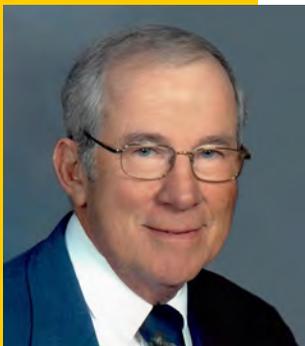
Both their son and one daughter attended Michigan Tech as well. Richard worked as a seventh and eighth grade science and math teacher in Peoria until he retired in 1987. After retirement, he continued to teach part time at Illinois Central College for ten more years. Richard also raised beef cattle on his farm.



NEIL PAULSON '57

Neil passed away on April 28, 2017, in Drummond, Wisconsin. Neil's 31-year career was spent with the US Forest Service—first in the Mount Hood National Forest in Oregon, then on the Wenatchee National Forest in Washington, the Gifford Pinchot National Forest in Washington, the US Forest Service headquarters in Washington, DC, and finally the Coconino National Forest in Flagstaff, Arizona, as forest supervisor. Neil eventually moved back to Wisconsin where he and his wife, Pat, bought Bear Country, a sporting goods store in

Drummond that they ran for seven years. Neil was active in public service, especially in relation to natural resources. He was proud of his work helping to reintroduce elk to northern Wisconsin. Neil stayed active his entire life, even during his prolonged battle with cancer. Neil was a Finn, and as all Finns are known for, he had *sisu*, a never-say-die individualism they seem born with. Neil will be missed for his determined nature, his merry wit and love of jokes, his generosity, his love of family and friends, and for his never-ending public service.



DALE ZAUG '65

Dale passed away on January 18, 2017, at his home in Marion, Wisconsin. Dale was diagnosed with glioblastoma, stage four brain tumor, in June 2015. Dale worked for the Wisconsin DNR for 38 years, first as a forester, then as a systems analyst and data administrator. After retiring to the Big Falls area

in 2004, he started Zaug's Forest Enterprise. He was very active with many environmental organizations, including the National and Wisconsin Woodlands Owners Associations, the Wisconsin Wildlife Federation, the Boy Scouts of America, and others.



DAVID WELLMAN '72

David passed away on February 20, 2017, at his home in Indian River, Michigan, surrounded by his family. David worked for the Michigan DNR for 23 years, making many friends throughout Michigan, finally settling in Indian River for the last 21 years of his career. He retired

in 1995 as the assistant forest manager and went on to become a private forestry consultant until January 2016. David loved Michigan Tech and was responsible for encouraging many students to attend. Two of his nephews presently attend Tech.



Arden Mikich '57 Justin Miller '00 Ralph Swanson '42 Amber Oja '12 Jack Zollner '52

Huskies Come Out of the Woods for Reunion 2017

At the 2017 Alumni Reunion, schools and departments hosted gatherings across campus. The School of Forest Resources and Environmental Science shared then-and-nows—axes to chainsaws, horse-drawn wagons to bulldozers, range poles to GPS—at an open house on Friday and a Saturday morning brunch.

Ralph Swanson vividly remembers his graduation day. “When I got my diploma, they said step over to the next table.” The 97-year-old 1942 forestry graduate received his ROTC commission in the Army Corps of Engineers. Three days later he was deployed with Patton’s Army.

Swanson’s wife Harriet, who also turns 97 this year, and two of their three sons, Skip and Ron (they also have an older daughter), made the trip from the couple’s lake home in Wisconsin.

Harriet, a US Army nurse, arrived in Normandy a couple of days after the epic 1944 storming of the beaches and followed the troops to Paris. She served in England, France and Germany; his tour of duty took him to England, Africa and Italy. They met after the war.

As members of what Tom Brokaw dubbed The Greatest Generation can attest, the post-war influx of workers created a competitive job market. But Husky tenacity is nothing new.

“I got on Highway 13 going south and stopped at every paper mill,” Ralph recalls. “I went to work for Emmett Hurst (Consolidated Papers). He and Don Sherman (Tech’s legendary athletic director) were good friends. They would check in to see how I was doing.”

Besides Ralph’s 75-year anniversary, the School of Forest Resources and Environmental Science celebrated a trio of Golden M inductees—that’s the select club for Michigan Tech graduates of a half-century ago or longer—including Arden “Mick” Mikich, 60 years; and Jack Zollner, 65 years. (Robert Borak, another 65th anniversary Husky, did not attend.)

Friendship is what 1978 forestry grads Barbara Bennett and Sherie Gibson find most noteworthy about their time at Tech. “We made lifelong friends,” Gibson says. Their group, a cross-section of majors, tries to get together at least every five years.

HISTORY LESSONS AND CAMPUS CHANGES

SFRES hosted a branding party, where the smell of burning wood on a cool afternoon lent a campfire atmosphere—hot coals and stamping of wooden disks cut from salvaged trees that fell victim to the emerald ash borer. The uniquely Tech mementos were given out at the School’s open house, and a group brunch at Nara Nature Center on Saturday morning.

“I had to tell them, we would never brand wood,” says Jack Zollner, who graduated in 1952, “just about the time the chainsaw came in. You had to twist the handle to keep the carburetor level.” He spent 30 years in forest management in the Upper Peninsula, including running the sawmill at Camp Alberta, where research is conducted and Michigan Tech students attend field classes.

“I worked with a crew in the cedar swamps of Schoolcraft County, making hand-hewn ties. Exciting for me, being a young punk, to see them swinging with broadaxes close to their feet. They had an ice road and stayed there all winter.”

The most magnificent tree he ever saw was cloistered in an inaccessible swamp, "Seven thousand board feet in one tree."

Zollner, who lives in Iron Mountain and hails from the Detroit area, chuckles when asked why he chose Michigan Tech. "When I got out of the service, I wanted to go logging and engineering in Oregon. There were no openings. I had to go to Soo Tech in the old Fort Brady barracks." Those were the days when the University offered a two-year program on the east end of the UP. Students then transferred to the main campus.

A REUNION FOR ALL AGES

"This is more of a life choice than a career," says 2000 graduate Justin Miller, who received the School's Alumnus of the Year award. "We do it because we love it. We love what we do." President of Green Timber Consulting Foresters, Miller employs other Tech alumni in stewardship of regional forests, educates young people about natural resources careers, and participates in cleanups to help maintain the School's more than 60-year-old Otter River Camp. He previously won the Young Alumni award, which this year goes to Amber Oja, a 2012 alumna. The Weyerhaeuser Michigan GIS (geographic information system) and GPS (global positioning system) coordinator recruits interns for the company, and is Upper Peninsula vice chair for the Society of American Foresters. Oja graduated with a double major in forestry and wildlife ecology and management is pursuing her MBA at Michigan Tech.

"We're number five in the country in natural resources education, the smallest university in the Top 10. The people that we graduate—you create that," says Terry Sharik, dean of the School of Forest Resources and Environmental Science.

NEW FACULTY

FENGJING "FRANK" LIU | Ecohydrology



The School of Forest Resources and Environmental Science is delighted to welcome Fengjing "Frank" Liu as associate professor of ecohydrology. Frank joins us after serving on the faculty at Lincoln University in Missouri for seven years. He previously completed his PhD at the University of Colorado in Boulder and was a postdoctoral researcher at the University of California, Merced.

Frank has extensive teaching experience, including classes in hydrology and applied watershed management, and will teach forest and landscape hydrology.

He also has a strong record of funded research in watershed hydrology. In his research at Michigan Tech, Frank plans to work to understand ecohydrological processes of forest ecosystems and lakes, and the effects of climate change of these processes in the Great Lakes region. He is interested in developing collaborations in SFRES and across campus to develop ecohydrological research that leads to long-term measurements of ecological and hydrological variables and fluxes above and below ground. He anticipates that some of this research will be based at the Ford Center and Forest.

We look forward to having Frank as a part of our academic community and to his contributions to our teaching and research missions.

FACULTY FAREWELL

Following the end of the spring semester, three of our faculty members moved on to the next stages in their careers. Oliver Gailing (associate professor) is returning to Germany with his family to become professor and chair of forest genetics and forest tree breeding at the University of Göttingen. Joseph Bump (associate professor) and Amy Schrank (research assistant professor) are relocating their family to the Minneapolis/St. Paul area where Joseph has accepted an endowed chair position in forest wildlife at the University of Minnesota, and Amy will serve as an adjunct assistant professor. We are sad to see them leave, yet we look forward to continued collaboration with them. We are delighted they were able to grow professionally at Michigan Tech, and we thank them for their many contributions to our school over the years.



3

Yvette Dickinson

Michelle Miller

Sherie Gibson

Barb Bennett

Making Tracks...

1

MICHIGAN TECH AND THE NORTHERN INSTITUTE OF APPLIED CLIMATE SCIENCE COLLECT INPUT FOR THE NATIONAL CLIMATE ASSESSMENT

Every few years, hundreds of scientists contribute to a National Climate Assessment that summarizes the impacts of climate change on the United States. This spring, the regional author teams for the fourth National Climate Assessment (NCA4) held a series of regional engagement workshops to collect information from stakeholders. The School of Forest Resources and Environmental Science and the Northern Institute of Applied Climate Science hosted a satellite session in Houghton for the Midwest Regional Engagement Workshop, collecting input from more than 35 people in the Keweenaw and nearby communities. Workshop organizers wanted to hear from participants about specific climate change concerns, information needs, and ways of coping and adapting to change. NCA4 authors plan to use this feedback to help draft the report. Read more about the information they collected from Northwoods communities.

► mtu.news/2oulv0f

2

CREATING CONNECTIONS

SFRES has been busy this summer attending and hosting youth outreach events around the region. Connecting with the next generation of land stewards while sharing the

educational opportunities at Michigan Tech is an important step in increasing the talent, diversity, and enthusiasm of the program. Highlights include the Metro Detroit Youth Day with 37,000 students in attendance, and a four-day camp at the Ford Center and Forest for middle school students from Wisconsin.

3

WOMEN IN NATURAL RESOURCES

Natural resource- and forestry-related fields have a history of being dominated by male professionals, despite the increase in female students. Twenty-five percent of our students in forestry are women, and more than 50 percent of wildlife ecology and management and applied ecology degree program students are women.

This year, Research Assistant Professor Tara Bal and Assistant Professor Yvette Dickinson suggested the creation of a Women in Natural Resources (WiNR) group and met with positive results. More than 30 people—faculty, students, and alumni—were present at the first meeting. Within an hour, the WiNR Facebook page was live and students had started the process for becoming an official Michigan Tech Student Organization.

WiNR is open to anyone. Students of all standings, along with faculty members and staff, are encouraged to join and can show support. The group is also open to those outside of SFRES, but who study or work in fields related to natural resources.



Amber Oja

Karin Van Dyke



5

TARA L. BAL

The group's goal is to provide a forum for women to collaborate, come up with new ideas, start new projects, find mentoring, network, and develop future opportunities, with natural resources as the thing that ties it all together.



Jerry Jondreau, SFRES recruiter talks to students about careers in natural resources.

4 WOMEN IN NATURAL RESOURCES SCHOLARSHIP FUND

We have created a fund to support scholarships for female students in natural resources, after discussing the idea with female alumnae. We hope to raise enough funds to endow the scholarship, allowing it to support female students in perpetuity, while creating the future of natural resource management.

5 BAL CONTINUES TO DEVELOP COURSES, PROGRAM

Tara L. Bal, research assistant professor, is being recognized for her innovations in teaching, and for her involvement in curriculum development and assessment.

Tara has developed and delivered a novel class in Maple Syrup Management and Culture. This class was recently added to the humanities, arts, and social sciences (HASS) list and thus is accessible to students throughout the University. The class is online and also requires a hands-on experience in maple syrup production. Most students complete this at the Ford Center and Forest, which has facilities for maple syrup production. For most of the non-major students, this may be the only class they take that exposes them to forest ecosystems and products derived from those ecosystems.



Members of Women in Natural Resources at K-Day.



Michigan Technological University

SCHOOL OF FOREST RESOURCES AND ENVIRONMENTAL SCIENCE

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ANDREW STORER
Associate Dean, SFRES
storer@mtu.edu

MESSAGE FROM THE ASSOCIATE DEAN:

We hope you have enjoyed reading this edition of Re:Generations. Our goal is to keep you up to date on our successes and our challenges, and to share stories of the people who have been associated with the School over the years. If there are topics that you would like to see in the newsletter in the future, please let us know. We would appreciate any feedback you can give!

In our education and research programs, we work to ensure that we are meeting the needs of today's students and society. Our communications with alumni also try to use the technology of the day, and many of you are connected with us through Facebook (@sfres), Twitter (@MTUsfres), and other social media platforms. If you have not already done so, please follow us on these platforms so you can see the increasing number of posts from students, faculty, and staff that share news and experiences, and work to

involve alumni in discussions about what we do.

On the subject of feedback, I want to thank all of the recent alumni who responded to the short survey about their employment since graduation. This was used in our report submitted to the Society of American Foresters as part of the reaccreditation process. Having recent job placement history available to us also helps us when we talk to prospective students with interests in careers in natural resources. We will ask for similar information from graduates in applied ecology and environmental science, and in wildlife ecology and management, in the near future.

We recognize that our high ranking in the fields of natural resources is largely a result of how our graduates represent us in the professional world, and we appreciate the great work of our graduates to promote the School and its people.

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