Greenleaves

Newsletter of the Bruce Grey Woodlands Association

WINTER 2018

www.bgwa.ca

President's Message

Chris VanderHout

Welcome to another year with the Woodlands Association! Spring is working hard to push through this winter weather and we're all looking forward to warmer days. I've finished my winter improvement cutting and have been working to pull some of the firewood out. Fell, cut, move, split, stack; move, stack, burn and repeat…it sure is a familiar feeling. Well it all keeps me active and away from the front of my computer; where too many hours are spent these days. What the heck did we do when we didn't have this invention?

We are now past our AGM, held at the Grey Roots Museum in Owen Sound. Members caught up on Association Activities, socialized and enjoyed a presentation by Glen Trivett- (more on that later in the Newsletter); many thanks to Glenn for coming to speak to us. Grey Roots continues a fantastic spot to hold our yearly meeting and I am very happy to have access to such a great local facility. It was great to see so many people at the event, and as we reflected on the past year, it was nice to think back to some of the great events and activities that were put together by our Board of Directors. With the exception of one, all of last year's board members have stood for another year giving us 10 directors. Our constitution allows us to have 15, so we have room for 5 more. We would love to have a few other members involved and I invite

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HOLD THE DATE - JULY 31st - BGWA'S 1ST-EVER ROAD TRIP!

Join members & guests and travel in comfort by air-conditioned coach to Somerville Tree Nursery for a guided tour of the operation, along with brief stops of interest in Dufferin & Simcoe Counties.

Itinerary & cost to be announced once finalized (see www.bgwa.ca). Tentative plan is to depart from Sulphur Springs CA (south of Hanover) 9AM and return approx 5PM.

How about hosting a member tour of your wooodlands?!?

Contact Kevin Predon
519-270-0748

Next Board Meeting May 30, 7-9pm Saugeen Conservation in Formosa Members Welcome!

(President's Message, from page 1)

you to come and join us at any of our board meetings which are always posted on the website. Next meeting is May 30th (after the Tree planting season mellows) from 7:00-9:00 at the SVCA in Formosa. Feel free to contact me directly if you have any inclination to become more involved.

At our first meeting, held March 14 in Owen Sound the Board :-:

- Confirmed our donation of $150 to the M'Wikwedong Indigenous Friendship Centre as our thanks for Glenn Trivett's presentation at our AGM
- Reviewed the Treasurers Report and reviewed and approved a budget for this year's activities
- Voted on executive positions- listed in this Newsletter
- Set up the 2018 Events, Communications and Membership committees
- Reviewed some details for this years planned bus tour- details to come
- Voted on this year's recipient of the Association Award of Merit- to be presented at the upcoming Woodlot Conference on March 24th

As you have likely determined, I have agreed to stand for another term as President of the organization. I have been happy to contribute in this manner and look forward to another productive year. I am extremely fortunate to have an engaged group of directors that make my job reasonably straightforward and has allowed for much progress over the past several years since the Bruce and Grey Associations amalgamated. From that time we have hosted many activities, and laid a great foundation by developing our current logo, getting professional looking presentation banners made and reinstating the Award of Merit to list a few. I am proud of where we have reached thus far and look forward to many more prosperous years for BGWA.

Wishing you all well,

Sincerely

Chris Vander Hout

GREENLEAVES

is the member newsletter of the Bruce Grey Woodlands Association, published quarterly and distributed to current BGWA members. Submissions are always welcomed on any topic related to BGWA's vision:

Promoting healthy forests and ecosystems in Bruce and Grey Counties through education, recreation and sustainable management practices.

Information, opinions, and directions in this publication are those of the authors and do not necessarily reflect BGWA advice or policy.

bgwa@naturemail.ca

Mailing address: BGWA c/o Grey Sauble Conservation Authority, 237897 Inglis Falls Rd, RR4, Owen Sound, N4K 5N6

Editor's Comments

Malcolm Silver

I was deeply touched to receive the 2018 Award of Merit from the Association at the Elmwood Conference and thank it for this singular honor.

To this *Greenleaves* has appeared quarterly. That timing will continue but the committee *that must be obeyed* deemed it best if it appears mid-seasonally (October; January; April and July) rather than as now. That will occur in future, if with a hiccup with this edition & the next. This edition was prepared to the old timetable & the next will appear in June because I will be in China & Australia from late June to early August. The following edition will appear to the new schedule in October

My sincere thanks to contributors to this edition

A Spirit-Centered Cycle of Life

By Gary Kenny, BGWA Member

From a medicine bundle he calls Grandfather and Grandmother because of the historically sacred objects it holds, Glenn Trivett, an Ojibwe historian, traditional knowledge keeper and medicine man takes a round stone. It is roughly the size of a tennis ball. He holds it lightly in the palm of his hand and looks at it with an obvious reverence. This stone "is sacred," he says. It "has a Spirit."Trivett explains: In traditional Indigenous gatherings where people would customarily sit in a circle, the stone would be passed from person to person, it's innate Spirit having given them the inspiration, wisdom and strength to speak their minds on whatever the subject of deliberation or reflection might have been. In our Indigenous belief system, "all things have a spirit," Trivett adds – people, animals, trees, even inanimate objects like a stone. "All things [in the world, even the universe] are connected" through Spirit and are equal; "Mother earth doesn't discriminate," he adds wryly. "If I put the stone down in the grass," Trivett continues, its Spirit changes the grass. If a deer comes along and eats the grass, the Spirit of the grass becomes part of the deer. If I kill and eat the deer, the Spirit of the deer becomes part of me. And when I die, I become part of the Great Spirit."

Trivett was guest speaker at GBWA's Annual General meeting on February 24th. He addressed the topic, "The interrelationship between an Indigenous worldview and woodland environments."

Trivett works with the M'Wikwedong Native Cultural Resource Center in Owen Sound (known casually as the Friendship Center) and is its youth program coordinator. In a former career he was a constable with the Ontario Provincial Police.

This spirit-centered "cycle of life" informed the worldview of Trivett's Ojibwe ancestors, who in pre-settler times dominated the Grey-Bruce region and were second only in population in North America to the Navaho people of what we know today as the southwestern United States. It represented the work of the Creator, variously referred to as Gitchi-Manitou (the Great Spirit), Energy, and God in more recent times. Trivett prefers to think of the Creator and Creation as "the Great Mystery."

Whereas the Europeans who settled the Grey-Bruce and other regions of Canada differentiated themselves from, even elevated themselves above, the natural world, Indigenous peoples, Trivett says, saw themselves a part of the cycle of life; as intimately connected with and an equal part of nature, or Mother Earth. They considered themselves no more important than the insects, animals, plants and trees among which they lived and made use of, Trivett said.

The inspirited woodland environments of Grey-Bruce were of special value to Trivett's Ojibwe ancestors and provided materials used for medicinal and many other practical purposes. The leaves of Eastern white cedar trees, for example, were brewed as a tea which, rich in vitamin C and other beneficial properties, helped ward off ailments in winter when people lived together in close quarters. The bark of white birch trees could be used to make pots for holding water, to build durable canoes, or as an accelerant to start fires. The inner bark of the basswood tree yielded tough sinews which could be wound together to make cord that was strong and served multiple purposes. Virtually every tree in the sacred forest had a valued purpose.

Knowing both instinctively and consciously of their intimate relationship with Mother Earth, Indigenous peoples were consistently mindful of the need to give thanks for whatever of the natural environment they used, Trivett says. Whether gathering cedar boughs, stripping birch and basswood bark, or killing a deer or another animal for food, an offering of dried wild tobacco was always made to signify both their appreciation of and Spirit connection to what had been taken and used.

The Indigenous youth Trivett works with through the Friendship Center "really latch onto" this concept of Spirit connection, he says. They come to see themselves as part of the Great Mystery, just like the trees in the forests or a pair of moccasins he might teach them to make as part of a crafts program. By helping youth reconnect to this Spirit-centered cycle of life, Trivett believes Indigenous youth, many of whom are deeply wounded and troubled by the phenomenon of inter-generational trauma that affects so many Indigenous people across Canada, are finding a spiritual center. They are discovering a new purpose in life and beginning to walk a path of healing and reconciliation.

(Continued on page 7)

The Afterlife

By Gerald Guenkel, RPF, BGWA member

Yes, I'm going to present to you a vision of the afterlife. Not my afterlife or yours, but rather the afterlife of trees. As winter slowly makes way for spring and then glorious summer, our human tendency is to clean-up and declutter our homes and workshops as a true spring ritual. This article is going to discourage you in taking your spring clean-up energy into the woodlot. That's right, leave those dead trees, snags and downed woody debris alone and feel guilt free doing so!

The afterlife of trees can actually be considered more important than when they were living beautiful, wood producing, wind slowing, carbon-storing organisms. It is said there are 4 lives of a tree; they are when a) young as a sapling, b) as a mature tree, c) as a standing dead tree and d) finally as down and woody debris. The afterlife of a tree is of immense importance to your woodlot. These dead trees contribute to the woodlot easily as many years as they were alive! Dead trees naturally provide habitat for about 25% of all forest wildlife species. Trees that have died recently provide great blue herons, bald eagles and osprey nesting sites at the tops of snags/chicots. Dead branches are prime perches for raptors; also fly-catchers, kingfishers and other birds hunt from these sites.

Stabb, Mark. *Ontario's Old Growth: A Learner's Handbook*. Canadian Nature Federation, 1996.

As the standing trees begin to slough off their bark, bat species, insects and some butterflies will begin to roost under the loose bark. Some birds, like the brown creeper, will use such sites for nest building. Fungi, moss, lichens and bacteria encourage the process of decay, summoning in carpenter ants and wood borers. Woodpeckers are attracted to this eating fest and they, with other animals, create cavities for feeding and nesting. A tree cavity like a good house is comforting to the owner! An astounding diversity of wildlife use these; including ducks, flycatchers, warblers, wrens, thrushes, falcons, owls, mice, squirrels, weasels, honeybees, bats, racoons, porcupines and even the occasional bear! Note: not all cavity trees are created equal. On next page is a table that provides a rough breakdown in what wildlife uses different sizes of tree cavities (Stabb, Mark. Ontario's Old Growth: A Learner's Handbook. Canadian Nature Federation, 1996). The key fact-the bigger in diameter the dead tree, the more its wildlife value shall be.

So, in the first half of a tree's afterlife of 40 to 200 years, creatures of all sizes and shapes are relying on your woodlot for an ideal habitat.

The second half of a tree's afterlife begins when it finally topples to the ground from weather, decay or insect/animal damage. That's when it becomes DWD – down woody debris. When you're hiking down a trail and see DWD, you may say: What a mess! I need to clean that up! What a waste! It's not a waste, you are seeing the second phase of a tree's afterlife.

What's so great about wood slowly rotting into oblivion? Three things: a) more diverse wood structure is created, b) nurse logs for the future forest and c) at the later stages the mounds and pits create unique microsites across the woodlot.

What to do in your woodlot to make a difference?

Identify some large alive or dying trees for future standing dead tree replacements

Identify large dead trees in your woodlot to ensure their long-term wildlife contribution

Stabb, Mark. *Ontario's Old Growth: A Learner's Handbook*. Canadian Nature Federation, 1996.

Keep 2- 4 cavity trees per acre that are least 25 cm diameter at breast height (dbh) and at least 1 to 2 cavity

(Continued on page 5)

CAVITY SIZE	CAVITY DETAILS & DWELLERS
Small 2.5—5.5cm hole diameter	• Size of $2 coin to size of racquetball • Excavated by Downy Woodpecker, Red-bellied Sapsucker, Hairy Woodpecker, Black-capped Chickadee, Red-breasted Nuthatch • Small holes can be used by Tree Swallow, White-breasted Nuthatch, House Wren, Carolina Wren, Eastern Bluebird, European Starling, Prothonotary Warbler • Small dens for Deer Mouse, Eastern Chipmunk, Red Squirrel, Northern Flying Squirrel, Southern Flying Squirrel
Medium 5.5—10cm hole diameter	• Size of hardball to size of grapefruit • Excavated by Northern Flicker, Red-headed Woodpecker, Red-bellied Woodpecker, Black-backed Woodpecker, Three-toed Woodpecker • Medium-size holes can be used by all small hole nesters above plus Wood Duck, Screech Owl, Boreal Owl, Saw-Whet Owl, American Kestrel. • Dens for mammals above plus Grey Squirrel
Large 10—12.5cm W 12—20cm H	• Size of paperback novel with rounded corners • Excavated by Pileated Woodpecker • Large holes can be used by all hole nesters above plus Common Goldeneye, Bufflehead, Hooded Merganser, Barred Owl • Dens for larger mammals such as Grey Squirrel, Raccoon, American Marten
Extra Large > 15cm W	• Size of volleyball or larger • Usually created by decay rather than woodpeckers • Tend to be roost sites and escape cavities rather than nests

(The Afterlife, continued from page 4)

tree per acre should be 40+ cm dbh (best if well-spaced across the area to minimize wildlife territorial issues)

Leave blowdown, and down woody debris to decompose over time

There is so much life in the afterlife in your woodlot!

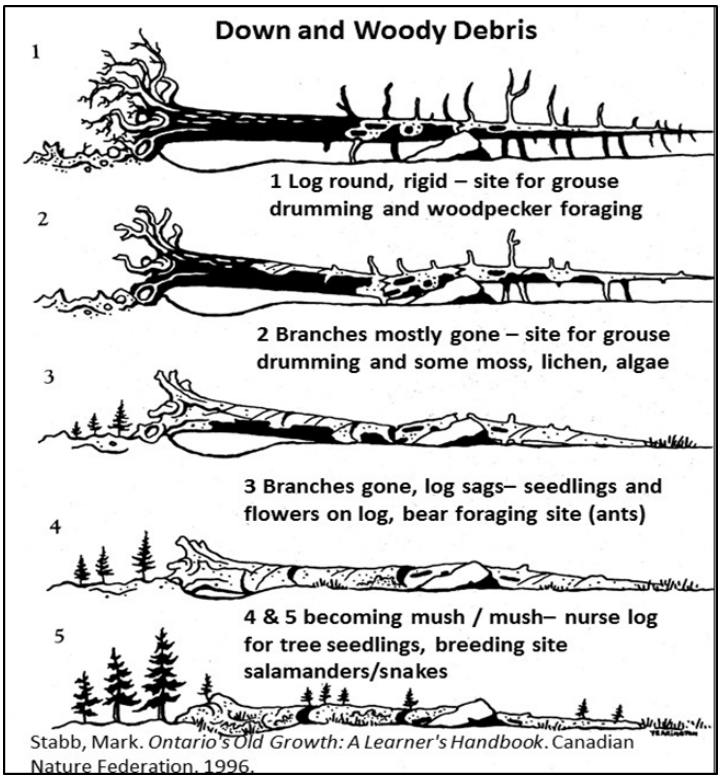
Sources used:

Stabb, Mark. Ontario's Old Growth: A Learner's Handbook. Canadian Nature Federation, 1996.

Burke, Dawn. A Land Manager's Guide to Conserving Habitat for Forest Birds in Southern Ontario. Ontario Ministry of Natural Resources, Science and Information Resources Division, 2011.

Hunter, Malcolm L., and Fiona K. A. Schmiegelow. Wildlife, Forests, and Forestry: Principles of Managing Forests for Biological Diversity. Prentice Hall, 1990

Gerald Guenkel, Registered Professional Forester
(Gerald@ElmStreetSolutions.com) – Woodlot Forestry Services - MFTIP.
Certified Cutter/Skidder Trainer for Ontario (Website: ElmStreetSolutions.com)



Stabb, Mark. *Ontario's Old Growth: A Learner's Handbook*. Canadian Nature Federation, 1996.

Careful Logging Standards & Practices

By Kevin Predon, BGWA Board member

Within any type of forest harvesting there is always the possibility that there will be damage to the site, or residual trees, or advanced regeneration. There are many factors that could influence this risk, such as topography, weather, corridors, type of machinery etc. but there is no substitute for an experienced, well-trained and thoughtful operator. A poor, careless, and apathetic operator working under ideal circumstances can produce worse results than a skilled operator working in difficult site conditions.

The OMNRF has developed a standard of practice for use in Crown forests that allows such damage to be measured and quantified. This standard, or something similar to it, is what private landowners can refer to when having their own properties harvested. Have your contractors become accountable for their practices, and have these standards written into a contract.

The standard states "After harvesting, 90% of the residual AGS (acceptable growing stock) basal area and 85% of the total residual basal area will be free of major damage.

Some examples of what is considered major damage occur when bark is removed from a tree. With no ground contact and for trees 10 -31 cm in DBH, the area of the wound cannot be greater than the square of the DBH. If trees are larger than 32 cm DBH, it is considered major damage if the wound is greater than 1000 cm2. For the same size of trees, if the wound makes contact with the ground, then the area of bark removal cannot be greater than 60% of the square of the DBH. Other types of major damage are obvious if more than 33% ofa tree's crown is destroyed; if more than 25% of the root area is exposed or severed; if any tree is broken off, or if any trees are noticeably tipped- over.

Here is an example of a poor logging practice showing damage from a "hot saw" on a poplar tree (pictured on the left) and good logging practices, with damage free maples (pictured on the right).

This information was extracted from the Ontario Ministry of Natural Resources and Forestry's 2015 *Forest Management Guide to Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario.* Toronto: Queens Printer for Ontario 394 pp.

New Uses for Wood

By Malcolm Silver, BGWA Newsletter Editor

Super wood could replace steel

New process could make wood as strong as titanium alloys but lighter and cheaper

Engineers at the University of Maryland, College Park found a way to make wood many more times stronger and tougher than before, creating a natural substance that is stronger than many titanium alloys.

This new way to treat wood makes it 12 times stronger than natural wood and 10 times tougher. It could be a competitor to steel or even titanium alloys it is so strong and durable. It's also comparable to carbon fiber, but much less expensive. It is both strong and tough, which is a combination not usually found in nature, It is as strong as steel, but six times lighter. It takes 10 times more energy to fracture than natural wood. It can even be bent and molded at the beginning of the process. .

The two-step process reported achieves exceptionally high strength, much beyond what [is] reported in the literature and given the abundance of wood, as well as other cellulose-rich plants, this paper inspires imagination. The most outstanding observation is the existence of a limiting concentration of lignin, the glue between wood cells, to maximize the mechanical performance of the densified wood. Too little or too much removal lower the strength compared to a maximum value achieved at intermediate or partial lignin removal. This reveals the subtle balance between hydrogen bonding and the adhesion imparted by such polyphenolic compound. Moreover, of outstanding interest, is the fact that that wood densification leads to both, increased strength and toughness, two properties that usually offset each other, said Orlando J. Rojas, a professor at Aalto University in Finland.

Ref: Jianwei Song, Chaoji Chen, Shuze Zhu, et al. Processing bulk natural wood into a high-performance structural material. Nature, 2018; 554 (7691): 224 DOI: 10.1038/nature25476

Researchers turn wood into a better insulator than Styrofoam

Researchers have developed a new type of material that could be used as a cheaper, stronger and more environmentally friendly insulator. They're calling it nanowood and it insulates better than Styrofoam and silica aerogels..

To make the material, they took wood and stripped away two of its natural components -- lignin, which makes it brown and rigid, and hemicellulose. That turned the wood white and made it less able to conduct heat. The tubed structures within a tree that transport water and nutrients up the trunk run in one direction and heat can conduct along those channels. But heat doesn't conduct across them very well and because stripping away the lignin and hemicellulose leaves many gaps in the wood, wood treated to become nanowood conducts heat in that direction even less.

Nanowood is also stronger, and it won't cause the same lung irritations that fibers from glass wool insulators do. The research team says that it could be fabricated for as low as $7.44 per square meter, can be folded and rolled when less than one millimeter thick and is biodegradable, so it won't add to landfill waste like the insulating materials we often use now do.

Ref: Science Advances 09 Mar 2018: Vol. 4, no. 3, eaar3724DOI: 10.1126/sciadv.aar3724

(Spirit Centered, continued from page 3)

Trivett is becoming increasingly known in Grey-Bruce and beyond through a course he teaches, Kiinoo Mudwin: Introduction to Indigenous History and Culture. It's a six-hour course that he offers from the Friendship Center. Non-Indigenous participants learn to understand and respect traditional and sacred Indigenous practices, the intimate and holistic relationship of Indigenous peoples with Mother Earth, and how the unfortunate realities of settler colonialism have devastatingly broken that relationship. The latter include deceitfully conceived or broken treaties, confiscation of traditional Indigenous lands, government policies of assimilation rooted in the infamous residential school system which sought to "kill the Indian in the Indian" as Trivett likes to say, and other debilitations lie behind the phenomenon of intergenerational trauma that tens of thousands of Indigenous people struggle to overcome today.

Trivett's purpose in life is to use his formidable traditional Indigenous knowledge, engaging teaching skills and personal charisma to help change that most unfortunate reality.

BGWA LEADERSHIP

Board - Executive

President/Chair
Chris Vander Hout
chris@evolvebuilders.ca
519-665-7414

Vice-President
Neil Baldwin
bgwa@naturemail.ca
519-794-0129

Treasurer/Registrar
Larry Cluchey
lcluchey@wightman.ca
519-799-5304

Secretary
Ron Stewart
rm.stewart@bmts.com
519-832-5548

Board - Directors

Cam Bennett
c.bennett@greysauble.on.ca
519-376-3076

Sandy Bunker
sbunks@gmail.com
519-367-2617

Gord Edwards
edwardsgle@gmail.com
519-794-2315

Donna Lacey
d.lacey@svca.on.ca
519-367-3040 x231

Kevin Predon
kpredon@brucecounty.on.ca
519-270-0748

Alison Stewart
alisoninlife@gmail.com
604-809-5283

Board - Resource Contacts

T.B.A.
Grey-Sauble Cons Auth
@greysauble.on.ca
519-376-3076

Jim Penner
Saugeen Conservation
j.penner@svca.on.ca
519-367-3040 Ext. 233

Craig Todd
Ontario MNRF
craig.todd@ontario.ca
519-371-8465

Board Committees

Communications
Neil Baldwin*
Alison Stewart

Membership
Larry Cluchey*
Donna Lacey
Ron Stewart

Events & Education
Cam Bennett
Sandy Bunker
Gord Edwards
Kevin Predon*
Ron Stewart

* lead hand

You don't have to be a Board member to get involved. Contact any member of a committee you might like to help with or learn about!

New Science

By Malcolm Silver, BGWA Newsletter Editor

Damage encourages maple species to become female

Jennifer Blake-Mahmud was told by colleague that they thought striped maple, a common tree in the understory of mountain forests from Nova Scotia to Georgia, switched sex from year to year, but they didn't know why.

In research published in the journal *Trees: Structure and Function,* she and her supervisor report that striped maples not only change their sex periodically, but that they can wait until the last minute -- three weeks before flowering -- to do so. The switch appears triggered by physical damage, which can prompt a branch to flower female if it's cut off a male tree. This suggests that physical damage plays a role in sex expression, although the authors are not certain yet what sort of damage. They note that even without people cutting off branches, as they did, striped maples lead a perilous life with deer rubbing their antlers against them, bears scratching against them etc.

Ref: Jennifer Blake-Mahmud; Lena Struwe. **Down to the wire: late season changes in sex expression in a sexually labile tree species, Acer pensylvanicum (Sapindaceae).** *Trees*, 2018; DOI: 10.1007/s00468-018-1655-6

Geese reduce metabolic rate to cope with winter

25 greylag geese were studied, part of a flock of greylag geese, by fitting small transmitters to measure heart rate and body temperature over an 18-month period. Heart rate can be used as an estimate of an individual's energy expenditure. In all geese studied there were profound seasonal changes of heart rate and body temperature, with peaks in summer and troughs in winter. Daily mean heart rate was on average 22% lower during December and January than at the summer peak, whereas daily mean body temperature was 1° C lower in the winter trough compared to the summer peak. The birds were fed year round and therefore did not face food shortages but still showed a substantial decrease in daily mean heart rate and temperature during winter. The main determining factors of energy expenditure were the number of daylight hours and the ambient temperature

Some non-hibernating mammals reduce their energy expenditure in winter and function with lower body temperatures. This research shows that birds, such as these greylag geese, adopt similar strategies.

Ref: Claudia A. F. Wascher; Kurt Kotrschal; Walter Arnold. **Free-living greylag geese adjust their heart rates and body core temperatures to season and reproductive context.** *Scientific Reports*, 2018; 8 (1) DOI: 10.1038/s41598-018-20655-z