Greenleaves

Newsletter of the Bruce Grey Woodlands Association

SUMMER 2020

www.bgwa.ca

Upcoming Board Meetings:

20 OCT @ 5PM

Owen Sound (location TBA)

15 DEC @ 5PM

SVCA office (Formosa)

Members always welcome!

UPCOMING EVENTS:

See back page for dates & details

President's Message

Alison Stewart

It has been a wonderful summer so far this season. Just enough rain and heat to get everything growing.

Here at our property we have noticed more wildlife than ever before. Our trees have had another major growing spurt this season. They are also not so shy this year. Have you noticed how much clearer the sky has been both during the day and in the evenings?

We had a great tour at our farm on July 18, 2020. Thank you to all who came out (2 tours of 16 people each) and to our events committee and board for lining things up and making it happen. It was fun sharing with you all the many projects we have done here. This was our first event since the COVID19 lockdown and was a great success.

How are you all doing? Have you gotten outside for walks and fresh air, sunshine on your body? How are your families doing? Please let me know. Now onto BGWA business:

- We held another Virtual Board Meeting on Aug 18, 2020.
- Our various committees have been hard at work coming up with new ideas, ways to deliver events and education.
- Be on the lookout for another survey from our communication committee so we can better serve you.
- We will be postponing the BBQ and doing another outdoor event instead – please see the details on the back page of the newsletter.

If you have any suggestions about an event that would be suitable, please reach out to us. We would love your input!

Wishing you all a wonderful summer.

Sincerely,

Alison Stewart

Would you like to host a member tour of your woodland property??

Contact Jim Coles:
jcoles@gbtel.ca
519-934-0020

Look sharp BGWA wear!

see page 9

GREENLEAVES

is published by Bruce Grey Woodlands Association (BGWA) and distributed to members to provide information, guidance, instruction, ideas and opinions related to trees, woodland ecosystems, forest management, and recreation in forest settings in or relevant to Bruce and Grey counties.

Content of articles is the sole responsibility of the authors and does not necessarily represent the views of BGWA. Images accompanying articles are provided by the author unless indicated otherwise.

BGWA's vision:

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

bgwa.ca **info@bgwa.ca**

Mailing address:

BGWA, Box 45, Neustadt, ON, N0G 2M0

Follow-Ups

RESPONSES AND ADDENDUMS TO PREVIOUS NEWSLETTERS

A comment on the article by Gary Kenny "Doing battle with some of Ontario's forest invaders" in the spring issues of "Greenleaves"

Gary described his intention to remove buckthorn and barberry from his River Croft Farm.

The wheat stem rust and the oat crown rust and other cereal crop rusts are caused by the fungus *Puccinia graminis* and it's various genetic forms. The fungus is heteroecious meaning to complete it's life cycle, it requires two hosts - buckthorn (*Rhamnus* spp.) and barberry (*Berberis* spp.) alternate with the cereal crops. In the early 1950s, the wheat stem rust caused severe damage in southern Ontario so all counties implemented a program to eradicate both buckthorn and barberry. As a kid in high school in the late fifties, I sprayed 2-4-D for two summers on every buckthorn and barberry we could find in Oxford County.

However, with the development of rust resistant cereal crops, the spraying stopped and buckthorn, particularly, and barberry have proliferated along with the fungus. If you look on the upper surface of buckthorn leaves you may find a small (2 to 4 mm) bright orange circle; that is the rust. As an aside, there is nothing more beautiful than a large barberry bush out in full, bright yellow, flower.

But we are not out of the woods yet - *P. graminis* is genetically very unstable. Northern Africa, the Middle East and more recently Europe, are being affected by new strains of *P. graminis* and scientists have yet to develop resistant varieties of cereal crops. If the new strains of the fungus get to North America, eradication of buckthorn and barberry on your property will be a priority again.

Important • VOLUNTEER REQUEST • Please Read

We are in need of a member to take over doing layout of our newsletter. It is not necessary to have high technical skill, and could be done as simply as using Microsoft Word. Or if you know the basics of Microsoft Publisher or some other layout application, that's a bonus.

You can work with our existing Editor, who reviews & edits the submissions, and just drop content into it to assemble the layout, or if you would find it simpler to do both editing and layout yourself that is fine too.

Newsletter production is not a Board position; you do not need to be a Director, or attend Board meetings, though you of course are welcome to.

****BGWA continues to exist only because of volunteers. This is a great opportunity to contribute to BGWA, from the comfort and convenience of your home computer, just 4 times a year.**

Contact Neil at newsletter@bgwa.ca or 519-794-0129

Ask a Forestry Professional

Answers by BGWA Forestry Professional members, coordinated by Susan McGowan BGWA Director

Jim White asks: *What can be done this year to reduce the numbers and damage from gypsy moth in the 2021 season?*

Gyspy moth, *Lymantria dispar* (Linnaeus), is native to Europe, Africa and southern Asia, and was introduced to North America in 1869. Since then, the insect has spread throughout Northeastern United States and Eastern Canada. Outbreaks occur in several year cycles and that has the situation in southern Ontario over the past several years.

Larvae hatch in the spring when the tree buds break, and over seven weeks will eat the equivalent of a square meter of leaf matter. Deciduous species such as red and white oak, poplar and white birch are attacked. In our area basswood and willow are also prime targets. Conifer trees such as white pine and blue spruce are quite often defoliated.

Larvae then spin a cocoon and pupate into moths. The female lays her egg mass on the bark of the tree, on houses, wood piles, and any other structure available.

(image source: https://www.myoakville.ca/2018/03/22/gypsy-moth-and-cankerworm-control)

Although some municipalities carry out a spray program to control the insect, many homeowners do not have a large enough woodlot to warrant this control. Generally left alone, the insect populations will build for several years until biological controls such as nuclear polyhedrosis virus, *Entomophaga maimaiga* fungus and a small parasitic wasp build to the point of causing a collapse of the infestation.

To control gypsy moth on a small scale, caterpillars and pupae can be handpicked and crushed. However the long hairs on the former can be irritating, so wear gloves.

To trap larvae wrap a 45 cm wide strip of burlap around the tree trunk and secure it with string around its mid region, . Fold the top over the string to hang down like a skirt. The larvae will crawl under the burlap to get out of the sun, and become trapped. Later in the day, lift the burlap, pick off the caterpillars and dispose of them, in hot soapy water.

(image source: https://www.pubs.ext.vt.edu/2811/2811-1021/2811-1021.html)

Egg masses can be scraped off the bark and other locations, and disposed of. Hopefully this will help reduce numbers of larvae, to keep defoliation of your ornamental yard trees to a minimum.

Do you have a question for a forestry professional?

Send questions to **ask-forester@bgwa.ca** and they will be answered in the Members area of the web site, with one or more selected for republication each quarter in the newsletter.

Please try to provide as much detail and context as necessary, but also be concise and clear in what your question is.

Assessing the global forest, five years on

By Gary Kenny - BGWA Director

There's some welcome good news on the global forest front.

Since 1990, the area of forest in protected areas worldwide has increased by 191 million hectares (ha). That means that, presently, 18% of the world's forests are located within protected areas, with South America home to the highest share.

This and other global forest news is reported in the Global Forest Resources Assessment (FRA) for 2020.

The FRA is conducted by the United Nations Food and Agriculture Organization (FAO) every five years. It's described as "a comprehensive view of the world's forests and a critical tool in formulating sound policies, practices and investments," according to Mette Wilkie, Director of FAO's Forestry Policy and Resources Division.

The news about protected forest areas also means that, for forests, the world has met and surpassed the Aichi Biodiversity Target (ABT) to protect at least 17% of terrestrial area by 2020.

The ABT is a set of 20 global targets under the UN's Strategic Plan for Biodiversity 2011-2020. Visit https://biodiversitya-z.org/content/aichi-biodiversity-targets for more information.

The FRA 2020's key findings were released in May and its full report, which includes data by country, was published over the summer.

An informative interactive publication called "A Fresh Perspective" accompanies the key findings and can be found at http://www.fao.org/forest-resources-assessment/2020/en/. Scroll down and find helpful information about the world's forests, compelling visuals, and quizzes to test your forest-related knowledge.

According to FRA 2020, there are 4.06 billion ha (1 hectare = 2.47 acres) of forest in the world today, equal to 0.52 ha for each person on Earth. Forests cover almost a third of the world's land surface.

"Forests are a big part of our lives, and can be seen in our food, household furniture and felt in the cleaner air we breathe thanks to their presence, so we must work harder and work together across forestry and agriculture sectors, to slow down deforestation faster" said Maria Helena Semedo, Deputy Director-General of the FAO's Climate and Natural Resources division.

"It's very welcome to learn that more and more forest areas are subject to long-term management plans, which are essential to achieve UN Sustainable Development Goal (SDG) 15," Semedo said. About 2.05 billion ha of forests, more than half the world's total, are subject to management plans.

The SDG's are a collection of 17 global goals designed as a "blueprint to achieve a better and more sustainable future for all." The SDGs, endorsed by 195 nations, were set in 2015 by the UN General Assembly and are intended to be achieved by the year 2030.

FAO is the custodian of key SDG 15 indicators "as it collects and reports authoritative data on the trends in percentage of forest area and progress on sustainable forest management," according to FRA 2020.

SDG 15 calls the global community to "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss."

The good news contained in FRA 2020 is unfortunately tempered by some not-so-good news. Global deforestation continues at an alarming rate, with 10 million ha a year being converted to other uses.

According to the Assessment, on a net basis, and taking into account forest expansions, the world's forest area has declined by 4.7 million ha a year since 2010.

But there's at least a modicum of good news in that otherwise arresting number. The rate of forest loss is slower, down from 12 million ha a year since the last FRA was published in 2015.

Other key findings of note in FRA 2020 include:

- During the last decade forest area has increased in Asia, Oceania and Europe, while the highest rate of net forest losses were recorded in Africa, followed by South America.
- Primary forests account for some 1.11 billion ha.

(Continued on page 5)

(Assessing the global forest, from page 4)

- Currently, 45 %(or 4.06 billion ha) of the world's forests are found in the tropics. That includes 1.11 billion ha of primary forest.
- Forty-four percent of the world's forest plantations contain introduced species.
- Most forest areas – 93% of the total – consist of naturally regenerating forests, while the remainder is planted.
- About 2.05 billion ha of forests, more than half the total, are subject to management plans.
- About 30% of all forests is used primarily for production of wood and non-wood forest products.
- The share of forests designated primarily for soil and water protection is increasing.
- Total forest carbon stock is decreasing with declining forest area although the carbon stock density has slightly increased within the last three decades. The total carbon stock in forests decreased from 668 gigatonnes in 1990 to 662 gigatonnes in 2020; carbon density increased slightly over the same period, from 159 tonnes to 163 tonnes per ha".

FRA 2020 represents "the outstanding collaboration between FAO and a global network of over 700 experts who together harmonized methods and examined more than 60 factors in 236 countries and territories to produce the assessment," Wilkie said.

The scope of the FRA 2020 is broad. Each country report contains 22 reporting tables organized around the following main topics: forest extent and characteristics; growing stock, biomass and carbon; designation and management objectives; ownership and management rights; disturbances; policies and legislation; and employment, education and non-wood forest products. The report on Canada can be found at: http://www.fao.org/3/ca9983en/ca9983en.pdf

Not included in the Assessment is consideration of areas of the global forest and their conservation from cultural and religious perspectives; forests as sacred places that bring humans into closer relationship with God, Creation, Energy, Life Force, Nature, the Great Spirit (for Indigenous peoples) – choose your metaphor. Interest in forests from that vantage point seems to be growing. As stated in June 2017 issue of *Science*:

> *Sacred forests are a crucial component of biodiversity conservation, but they remain difficult to account for in most global biodiversity management networks… they represent a unique conservation success for the planet, especially in developing countries where conventional economic metrics have a tougher time gaining traction. These sites also house the majority of biodiversity for billions of people in Africa and Asia, and their stewardship has been ensured over time through the respect and leadership of religious stakeholders.*

The FRA 2020's key findings and full report can be downloaded at: http://www.fao.org/forest-resources-assessment/en/

New Science

Compiled by Malcolm Silver, Newsletter Editor

HOW PLANTS DISTINGUISH BENEFICIAL FROM HARMFUL MICROBES. Plants recognize beneficial microbes and keep harmful ones out, which is important for healthy plants production and global food security. Scientists have now discovered how legumes use small, well-defined motifs in receptor proteins to read molecular signals produced by both pathogenic and symbiotic microbes. These remarkable findings have enabled the researchers to reprogram immune receptors into symbiotic receptors, which is the first milestone for engineering symbiotic nitrogen-fixing symbiosis into cereal crops. Ref . www.sciencedaily.com/releases/2020/08/200807093758.htm

IN A WARMING WORLD, NEW ENGLAND'S TREES ARE STORING MORE CARBON. This study revealed that the rate at which carbon is captured from the atmosphere at Harvard Forest nearly doubled between 1992 and 2015. Scientists attribute much of the increase in storage capacity to the growth of 100-year-old oak trees, still vigorously rebounding from colonial-era land clearing, intensive timber harvest, and the 1938 Hurricane and bolstered more recently by increasing temperatures and a longer growing season due to climate change. Trees have also been growing faster due to regional increases in precipitation and atmospheric carbon dioxide, while decreases in atmospheric pollutants such as ozone, sulfur, and nitrogen have reduced forest stress. The volume of data brought together for analysis, by two dozen scientists from 11 institutions, is unprecedented, as is the consistency of results. Carbon measurements taken in air, soil, water, and trees are notoriously difficult to reconcile, in part because of the different timescales on which the processes operate. But when viewed together, a nearly complete carbon budget, one of the holy grails of ecology, emerges. Ref www.sciencedaily.com/releases/2020/08/200804144643.htm.

Woodland Beekeeping

By Jim White - BGWA Director

I keep my beehives at my woodlot. The bees have a quiet place free from human traffic and access to a wide range of blossoms from maples, apple trees, clover, alfalfa, wildflowers like goldenrod and purple asters and my neighbour's green house full of tomatoes and peppers.

In this article I would like to show and tell you what is happening in the hive at this time of year. The bees' lives are integrated into the pollination of plants, nature has created an interesting codependency between bees and plant reproduction. Bees have a well-defined social caste system. Each caste has its role. During winter and until spring warms-up the bees in the hive form a cluster. In it they thermoregulate the temperature at its core to 37C by shivering their wing muscles – shivering to keep warm.

The Hive
(all photos in this article credit: Jim White)

During early spring the queen is stimulated to lay eggs by light and her attendant bees when they feed her increasing amounts of nectar/honey and pollen. She starts laying eggs in mid to late February. In May she is laying about 1,000 per day and will continue that until late September. A healthy colony by the first of June will number about 30,000 bees. Lots of bees, to be ready for the burst of dandelions and tree blossoms. The baby bees chew their way out of the wax-capped honeycomb cells after going through the egg, larvae and pupa maturation sequence. Baby bees keep the nursery and egg-laying area of the hive clean and feed the new eggs and larvae. More mature bees act as guards at the entrance to the hive. Guard bees can recognize the smell of foraging bees returning to the hive. If a bee from another colony arrives at the entrance or a wasp they will chase the intruder away or sting it death.

Each hive has a unique smell based on the chemical messengers, pheromones, produced by the queen. To me the hives all smell like a warm mixture of nectar, honey and wax. The oldest bees are foragers. From dawn to dark they search for pollen and nectar from blossoms. Foragers bring a load of pollen packed into small hairs on their back legs called corbicula. They bring home nectar in their honey crop. Upon returning each forager is greeted by a nurse bee who takes the pollen or nectar and starts the storage process of making honey. Foraging bees know how to communicate to their hive mates the direction and distance to fly to find the flower source. We can explore bee communication in a following Newsletter.

Entrance to the hive with the guard bees all lined up just inside the entrance to greet the returning foraging bees .

ABOVE: looking into the hive with a frame pulled out to see how full the hive is of bees – all busy as bees
RIGHT: looking at the brood area where you can see very young larvae at the bottom, older larvae and capped larvae before the baby bee's chew their way out at birth

Rock star cicadas: A threat to trees?

By Gary Kenny - BGWA Director

The cicada days of summer are upon us. From a treetop near you, you're sure to hear the tell-tale buzz of this imposing two-inch-long insect, arrestingly distinct with its bulging red eyes and orange-veined wings. Some have referred to cicadas as possessing a grotesque beauty only Mother Nature could love.

Of course, the cicada's characteristic buzzing, which begins slowly, rises to a sustained harsh crescendo, and then drops off suddenly, is all about sex – attracting a prospective mate for purposes of copulation and species reproduction and preservation.

Entomologists who study cicadas say the male's "song" is music to a female's ears, even if it's eardrum-bursting loud! One writer said the bacchanalia of love-sick cicadas, which lasts for about six weeks after which the male dies, would put the most debauched rock star to shame. "We're talking fame, orgy, ear-splitting music and death. There will be little time to eat," the writer said.

Levity aside, August wouldn't be August without the day-time drone of Mr. Cicada. But this signature late summer crooner also apparently poses a threat. Not to you and me – cicadas can't sting or bite. But to trees, maybe even the ones they sing from.

But before we examine cicadas' appetite for woody plants, let's take a closer look at this little marvel of Nature.

(Continued on page 8)

(Rock Star Cicadas, from page 7)

Cicadas are classified as a superfamily of insects, the *Cicadoidea*, in the order *Hemiptera* and in the suborder, *Auchenorrhyncha*, along with smaller jumping bugs such as leafhoppers and froghoppers. They begin life as an egg, deposited on a tree, that hatches into an ant-sized nymph. Soon after birth the nymph falls to the ground where it burrows into the soil and begins feeding on sap from tree roots.

After a period of subterranean existence which can last up to an astonishing 17 years, and when the soil temperature reaches about 18 degrees Celsius, the larva emerges from the soil through a self-made tunnel. It then finds a favoured resting place – often a tree trunk, fence post or wall of some kind - and molts.

Each August here at our rural property in Grey County, we find the hollow, hardened skins or exoskeletons of cicadas clinging to the coarse bark of the mature spruce trees that flank our house. During the writing of this piece for Greenleaves, I went outside and counted more than 15 shed skins around the base of a single Norway Spruce (see the accompanying photos).

Male cicadas produce their species-specific noise with vibrating membranes on their abdomens. The sounds vary widely, and some species are more "musical" than others. The insects use different calls to express alarm or attract mates.

There are more than 3,000 species of cicadas worldwide and they fall into roughly two categories: annual cicadas, which appear every year, and periodical cicadas, which spend most of their lives underground and only emerge every decade or two.

For a short illustrated life cycle of a cicada, visit: https://www.washingtonpost.com/wp-srv/special/local/cicada2013/index.html

But back to how cicadas pose a threat to trees and other woody plants.

Females lay eggs in a slit they make in bark usually on young, pencil-thick branches. Many will heal by forming calluses, but others won't recover, especially if visited by many egg-laying females. The vegetative growth above the injury will turn brown and die. Arborists call this "flagging."

Well into the annual cicada bloom, some leaf canopies may look frayed at the edges, but new growth the following spring will usually repair the damage. Shrubs may take a particularly hard hit, although their abundance of twigs works in their favour.

The greater threat is to young ornamental trees planted in the previous two years. Their branches, optimal in size for egg-laying cicadas, are important to a tree's future shape and growth.

Fruit trees are also prime targets. One farmer recalls what happened to a peach tree in his orchard: "The branches would just fall off," he said. That included branches with developing fruit.

Egg-laying female cicadas seem to prefer oak, maple, and cherry trees. But they will damage scores of other species, and they are drawn particularly to trees at the edge of a woodland," said Michael Raupp, an entomologist at the University of Maryland.

On the upside, cicada nymphs can aerate the soil, aiding the release of nutrients and nitrogen to the surface, benefiting a diversity of plants.

Cicada populations are apparently much higher further south in North America where they've even been said to "swarm" and where they pose a greater threat to trees and other woody plants.

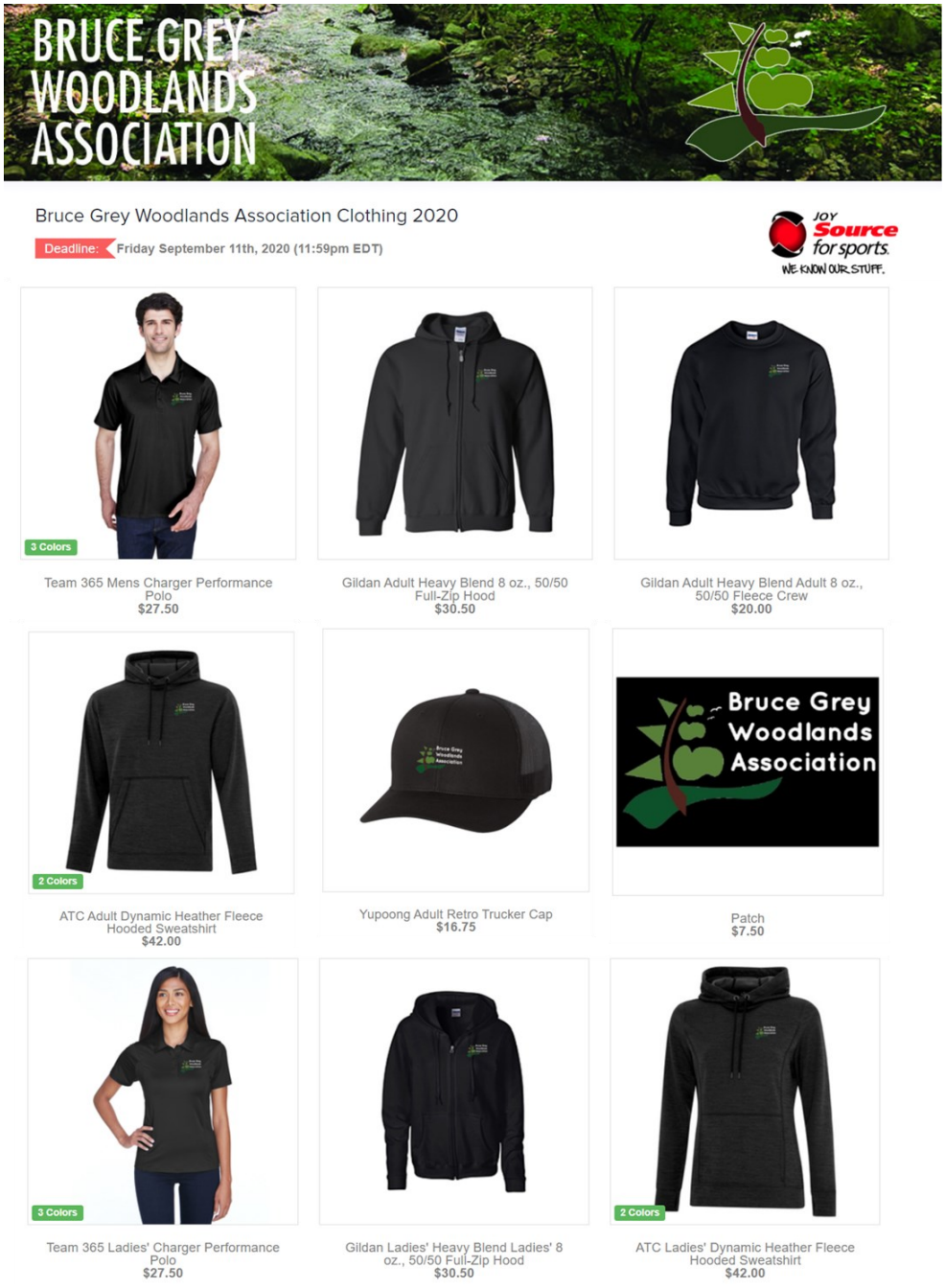
The life cycle of a cicada is a remarkable phenomenon," said Raupp. "It's got everything wonderful — birth, death, romance, sex, a spectacular natural event for people to witness and enjoy. It's something we should welcome with amazement."

Look Sharp: BGWA Clothing Available for Purchase!

By Kevin Predon—BGWA Secretary

The Bruce Grey Woodlands Association promotional wear sale is on NOW! All of the items pictured here are available for purchase from Joy Source For Sports in Walkerton. If you are interested in ordering, a special website has been set up by Joy's to make it easier. Just go to bgwa2020.itemorder.com/sale and place an order like you would on any other website. And if you need help ordering, or have any questions, they have a phone number and email address located at the bottom of the webpage for you to use.

We've got a variety of items for sale in both men's and women's sizes, which will be embroidered with the BGWA logo and the organizations name. We've got polo shirts, sweaters, and even a trucker style ball cap. And even though these clothes are durable and stylish enough for any occasion (I'm planning on getting that zip up hoodie and wearing it to Thanksgiving Dinner) there is an embroidered patch available that you can buy and sew on (or if you're Scott – have sewn on for you) anything you like. I'm going to get one for my cruising vest so that I can represent the BGWA when I'm out counting trees in the woods.



They've set a **deadline of Friday, September 11th to place orders,** however, we can do another run in the future if you are not able to get anything right now, but would like to later on. Unfortunately, we are unable to get any samples or sample sizes for anyone to try on, due to Covid-19 restrictions. The clothing brand is listed, and multiple sizing options are available, which will be helpful in ensuring that your purchases will fit nicely.

We've been told that it will take about 3-4 weeks to fill the order, which means that it should be ready just in time for the Tree Marking Workshop 2.0 – Chris Vander Hout edtion on October 17th in Ayton!

EVENTS: What's Happening, and What Isn't

By Jim Coles, BGWA Director

Fall BBQ & Bus Tour. The annual fall BBQ and bus tour has been CANCELLED for this year due to food safety and social distancing guidelines during COVID 19.

In place of the BBQ, join us for an **Education Event on the GSCA properties at Bognor Marsh**

Date: Saturday September 19

Time: 11:00 AM rain or shine

Leader: Mike Fry, GSCA Forester

Description: We will look at & discuss changes to a hardwood bush since harvesting about 5 years ago and discuss the thinning regime in a conifer plantation (2017) . A guided walk along the boardwalk to look at the various Provincially Significant Wetland attributes.

Bring your own box lunch for a pavilion get-together afterward

Registration: jcoles@gbtel.ca Detailed location will be provide upon registration

*We will limit numbers to 20 members and guests.

A **Tree Marking & Forest Management Workshop near Ayton**

Date: Saturday October 17

Time: 1:00 PM rain or shine (hope for better weather than last year)

Leaders: multiple foresters from local agencies!

Description: Management of a woodlot should reflect the wishes of the owner. As such, the objectives of management will vary, tree marking will vary and resulting forest management practices will vary. All will be discussed along with learning the technical aspects of tree marking.

Registration: jcoles@gbtel.ca Detailed location will be provide upon registration

*We will limit numbers to 20 members and guests plus guiding foresters.