Master Gardeners of Ontario

What's Growing On

Spring, 2013

Serving Ontario for over 25 Years

Join the email list and have the newsletter sent to you directly. Send an email to editors@mgoi.ca with your name, email and group. 595 Master Gardeners are already on the list. Are you?

www.mgoi.ca

No-Till is the Right Till

Robert Pavlis, Guelph and Wellington

For a long time farmers have been tilling their soil with the belief that it provides these benefits:

- Breaks up the soil to increase the amount of air in the soil
- Removes the surface crust on the soil
- Buries the old plant material so that it feeds the soil

Soil has structure that is made up of small particles (clay, silt and sand) that are glued together to form much larger particles. These large particles are critical for soil to contain the 25% air and 25% water most plants want. Tilling does add air to the soil temporarily, but in the long term tilling breaks up the large soil particles, destroying the structure and reducing the amount of air and water in soil. When tilled fields are converted to no-till, you can see the improvement in soil structure in as little as three years.

The crust on the soil surface is a problem since it prevents water from penetrating the soil. Rain will

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Come Grow With Us at the first ever Canadian National Master Gardener Conference

Tena van Andel, Conference Wrangler

In the flurry of anticipation and excitement don't forget:

- Fancy Floral Frippery for Saturday night's Soiree
- Check the conference message board if you are still looking for a ride, roomie, or new best friend.
- Your camera
- Appropriate clothing and footwear for outdoor activities and a mat in case of yogilates opportunities
- Space for substantial and sensational stuff -- some for free, some for the fortuitous and some for financing (basically, bring your mad money, we provide the stuff)
- Bring information about upcoming events -- garden tours, plant sales, speakers -- there will be room to promo
- All Spa experiences must be pre booked through Deerhurst.

For last Minute Millies -- there are a couple of spots left. Go immediately to www.mgoinationalconference.ca to register

Counting the minutes.....

What's Growing On is the newsletter of the Master Gardeners of Ontario, Inc. It is published four times per year in January, April, July, and October.

MGOI Happenings

Jane Beck, President

We are days away from the first ever National Master Gardeners Conference, Come Grow With Us; we are so very excited about this event and look forward to seeing you there. It promises to be an informative and fun time. For all the volunteers focused on the Conference logistics all the last minute fine tuning is happening...all the things that put the icing on the cake.

The Master Gardeners of Ontario have been very active for the last 10 days at Canada Blooms. Making presentations and answering gardening questions at advice clinics and Sit Down Sunday have kept Master Gardeners in the public eye. Thank you for your time and energy to make this the success it always is.

Thanks Linda Hugli - Great Job

Linda Hugli, whose 6 years on the Board has finished this year, is stepping away from her Board roles. Linda has not only been Zone Director, but also the Webmaster and Ask an Expert liaison with Landscape Ontario. Linda, thank you for your tireless efforts to create an interesting and informative site as well as manage both Zone 2 and the Ask an Expert role.

Master Gardeners of Ontario welcome Dave Kechnie as Zone 2 Director; Dave is also from the Sudbury Master Gardener group. And, taking over the Ask an Expert responsibilities is Edythe Falconer an Ottawa Carleton Master Gardener. Thank you both for taking on these roles.

We are still searching for a new MGOI webmaster - so, if you are interested, please alert us. Contact Linda Hugli/ Jane Beck.

Does No-Till Farming Result in More Pesticide Use?

editors

Spraying

For many reasons including costs, erosion control and soil fertility, no-till is becoming a very common practice in agriculture. It is an often held view that in order to control weeds while no-till farming, more herbicides are employed. The relationship is not simple. Here is an interesting article exploring the issue.

Canada Blooming with MGs

Tena van Andel at Canada Blooms

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No-Till is the Right Till from page 1

simply run off a crusted soil instead of penetrating it to the plant roots. Crusting is caused by rain drops pounding the soil (Science Daily Article on Raindrops). Tilling is a short-term solution that lasts until the next heavy rain. A better solution is to cover the ground with plant material. In no-till, the old plant material is left on the soil surface. Since raindrops no longer hit the soil, crusting is eliminated.

The third reason for tilling is to get the old plant material buried in the soil so that it decomposes and feeds the soil – but this is unnecessary. Nature is quite able to take care of the problem, in the same way that it deals with leaves falling in the forest and wild flowers dying back in fields. Worms and microorganisms degrade and integrate plant material into the soil.

In an agricultural setting, tilling requires the use of heavy machinery. This machinery compacts the soil resulting in additional degradation of the soil structure. No-till allows farmers to stay off the fields more, resulting in less soil compaction and less pollution.

See these videos for more details:

http://www.youtube.com/watch?v=q1aR5OLgcc0

http://www.youtube.com/watch?v=I_7d0h2bSoY

What is the status of no-till in Ontario? There is a lot of interest in developing better no-till systems – farmers want to use no-till for all their crops but for some crops, on certain types of soil, no-till is not yet economical. They spend significant effort and money to improve and develop new no-till procedures. In Ontario about 80% of winter wheat, 10% of corn, and 50% of soybean is grown using no-till.

Tilling the Garden Plot

Tony Rudd, London middlesex

Traditionally farmers tilled their soil by ploughing or by other mechanical means behind a tractor. In the vegetable garden we dig with a spade or we use a rototiller. A spade digs a trench, turning over the soil so that what was on the top is now on the bottom. Unwanted items such as stones, roots, grubs etc can be picked out. If compost, manure, leaves and crop residue are placed in the trench, these become incorporated when a second trench is dug. Soil organisms decompose the plant material, organic material is formed and plant nutrients released. Digging will kill some worms and may depress the soil micro-organism population temporarily. Digging in the warm summer months will result in the loss of moisture and the loss of organic matter due to oxidation.

If digging is done in the fall there is ample time for the soil to weather. Winter frost will break up clay especially if the clods are left rough and exposed. Moisture loss is less likely in the fall. By spring the soil will have weathered and settled into a substrate ideal for the development of plant root structures. Heavy rains however may leach away nutrients released when added plant material decomposed.

Spring digging is closer to the time of sowing. Incorporated plant material may not have time to completely decompose but is still releasing nutrients which may be a good thing. They are less likely to leach away before the plants need them. Spring rains can delay digging and hinder thus the weathering process. The time between digging and sowing is compressed. There is no benefit to clay soils from exposure to frost.

Rototilling is time and labour saving. Plant material can be incorporated by spreading compost etc. over the soil and running the machine over it. Over-working the soil is harmful to both soil structure and to soil organisms. The practice of "powdering" where the soil is reduced to a layer of fine powder is definitely not recommended.

My own preference is to till the plot in the fall with a spade. This gets the bulk of the work done. Then the earth can be "freshened up "by working lightly with a hoe prior to sowing or planting in the spring.

MGs in Action:

Ottawa-Carleton

Scheduled a full-day Design Workshop on April 27 as a fundraiser. The event sold out very quickly as the venue is limited to 36 participants.

Peterborough

Teaching An Introduction to Gardening

In the middle of mad preparations for this year's Peterborough Garden Show, the Peterborough Group held its very first Gardening Course. Nearly 50 citizens attended six 2-hour sessions on an "Introduction to Gardening". It was very rewarding and is a highly recommended activity.

Events

April 12 – 5:00 p.m. to 9:00 p.m., April 13 – 10:00 a.m. to 6:00 p.m., April 14 – 10:00 a.m. to 4:00 p.m. – Peterborough Garden Show at the Evinrude Centre, 911 Monaghan Road, Peterborough $6.00 per day (children 12 and under free when accompanied by an adult.) General show info: Sandy 705 761 9220 For more information visit www.peterboroughgardens.ca

April 16 at 7:00 p.m. at Lighthouse Festival Theatre in the Long Bar lobby, 247 Main St., Port Dover – Norfolk County presents "Spring Spectacular: Growing Magnolias, Rhodendrons and Azaleas in Ontario" with guest speaker Kevin Kavanagh of South Coast Gardens. Free admission.

May 5 from noon – 4:00 p.m. at the Toronto Botanical Garden Floral Hall – Ontario Rock Garden and Hardy Plant Society 5th Anniversary Super Plant Sale

May 25 at 9:00 a.m. in the Metro Grocery parking lot on Picton's Main Street – Prince Edward County MG's Annual Plant Sale – with the theme 'Edibles, Ornamentals and Plants We Love!'

2013 Series of Free Outdoor Tours and events at the Humber Arboretum in support of community education in horticulture and landscape stewardship, Etobicoke Master Gardeners and Humber Arboretum present:

Tour: "Spring Into the Arb" – Saturday, April 20 – 10:00 – 11:00 a.m

Drop In Event: Connecting People with Plants/Doors Open – Bugs & Blooms" and 'Spring into the Arb" – Saturday, May 25 – 10:00 am - 3:00 pm

Tour: "Some Like it Hot" – Wednesday, July 24 – 7:00 - 8:00 pm

Tour: "Let's Go Nuts In the Arb" – Saturday, September 7 – 10:00 - 11:00 am

Tour: "Awesome Autumn" – Saturday, October 19 – 10:00 - 11:00 am

Location: Humber Arboretum (at Centre for Urban Ecology)

205 Humber College Blvd, Toronto, Ontario

Trail Difficulty: Moderate (not wheelchair accessible)

FREE Admission

Book your spot today:

Registrations via phone: 416- 675-5009, or email arboretum@humber.ca

www.humberarboretum.on.ca/

Come and Join Us in Niagara

Saturday, July 13th and Sunday, July 14th - If you have not yet tried a M.G.O.I. Summer Workshop, why not plan to do so this year? This is the sixth year that these incredible learning opportunities are being held, and they attract Master Gardeners and Master Gardeners in Training from across the province, all ready to learn more about the wonderful world of horticulture and the environment. As always, the beautiful grounds of the Niagara Parks Botanical Gardens and School of Horticulture is our classroom. There are three topics offered, from which two may be chosen. These are:

- Examining the Impact of Invasive Species in Ontario's Diverse Landscape
- Garden Design – Creating the Living Space
- The Key to Success: Becoming Comfortable with Correctly Identifying Plants

More information can be found on the home page of the website at www.mgoi.ca. The cost for the two-day weekend is $250, and this covers lunches, breaks and many useful handouts. If you have any questions or would like more details about the workshop, please contact June Streadwick at streadwick@sympatico.ca

September 7-14 – The 2013 International Master Gardener Conference will be held onboard the Holland America cruise ship Westerdam en route to Alaska. Your choice of 8 seminars, plus 3 keynote speakers and optional shore trips to discover the nature and adventure of Alaska. For more information visit www.uaex.edu/imgc2013/

Milestones

New MGiTs

Essex-Windsor – Susan Boucher, Lourdes Daly, Sue Kelsh

London Middlesex – Amy Turnbull

Peterborough – Bill Astell, Calvin Stillman

New MGs

Etobicoke – Isabel Belanger, Sharon Burge, Dixie Szasz-Taylor

Guelph and Wellington – Kathy Granger, Sharon Leggett and Deb Thompson

Toronto – Lisa Bennett, Abdullah Hamidi, Jenet Hamilton, Sue Hills, Lorraine Hunter, Heather Kamps, Marjorie Lenz, Bonita Parshuram, Lisa Renner, Judy Van der Vennen

5 Years

Kitchener – Christine Gilhuly

Ottawa-Carleton – Denyse Becker

Peterborough – Joan Harding

Simcoe County – Tracy Bosley

Toronto – Linda Boyko, Veronica Callinan, Judy Clarke, Sharron Colbert, Lori DiMonte, Jean Gardiner,

Maureen Hulbert, Susan Lipchak, Lesli Musicar, Dawn Scott, Claire Trepanier

10 Years
Kitchener – Liz Stacey

Peterborough – Kerry Hackett, Don Nicholson

Quinte Tweed – Karen Starcynowski

Toronto – Murray Duncan, Thade Rachwal, Elizabeth Stewart, Tena van Andel

15 Years
Kitchener – Helen Gordon

Toronto – Merle Burston, Lindsay Dale-Harris, Barbara Evans, Kim Price

25 Years
Kitchener – Gwynedd Brundrett

Toronto – Rosemary Dobson

Emeritus
Peterborough – Ferne DeBaeremaeker, Norma Evans

Toronto – Merle Burston, Jolanta Hickey, Nicole Leaper, Joan Lenczner, Susan Martin, Thade Rachwal, Eleanor Ward

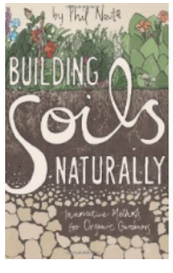
Retired
Toronto – Gerry Yates

Resigned
Toronto – Felicity Fowke, Brigid O'Reilly

In Memorium
Quinte Tweed – Bobbi Plummer

Building Soils Naturally - Book Review

Astrid Muschalla, Etobicoke



Building Soils Naturally - Innovative Methods for Organic Gardening, By Phil Nauta, 2012. Acres USA Publishing

In the following summary of the book you will learn:

- That healthy soil doesn't just happen by composting, fertilizing or companion planting. It happens by using a holistic approach which includes following sound organic land care practices;
- That your garden is an ecosystem and why conventional gardening practices do more harm to your plants and ultimately your garden;
- Why feeding the soil and not the plant, makes for healthier plants;
- How to create a productive, living soil using simple, hands-on approaches.

The author, Phil Nauta, is a Canadian and a Certified Organic Land Care Professional through the Society for Organic Land Care (SOUL). He is not a soil scientist but has had a lifetime of gardening experience, starting with his parents' nursery business. His humble and simple approach may seem lacking in depth at times but his goal is to create a practical guide and gives enough background as to why these practices work. It's a great beginners gardening book, for those transitioning to a more holistic gardening approach, and for serious food gardeners. While Nauta's passion lies in growing food plants, and a lot of his information applies to sustainable, continuous harvesting from the garden, his main points apply to all gardening.

A basic foundation for understanding plant's needs starts the book. This is well researched and helpful quotes from many well-known scientists and writers are cited. It's important for plants and microbes to have consistent access to small amounts of many different nutrients and typical NPK fertilizers don't do that. For example, because plants are about 90% carbon, oxygen and hydrogen, plants need these the most, but these aren't considered fertilizers. The case is made for organic matter (OM); it's composed of and holds on to nutrients and through breaking down, nutrients are slowly and consistently made available to plants, when they need it.

Current research is just scratching the surface on what we can't see in the soil – the soil dwellers – and that these are just as important to the garden as the sand, silt, clay, and water. A whole chapter looks at these soil dwellers - bacteria, archaea, fungi, and protists – how they eat and move in the soil, which is fundamental to a healthy soil food web. These rule in the garden, transforming minerals and organic matter in the soil into something that can support an abundance of life, not just plants. Plants, after all, can't run or move to find a partner to mate with or flee from danger so they need the help of many different organisms. It's plants which started the original bartering system by trading 50% or more of the carbohydrates and thousands of other substances they make during photosynthesis into the soil as exudates (food) for the microbes. The microbes give plants water, the food they need, and are often the first line of defense for a plant.

Through competition and cooperation, microorganisms, animals and plants recycle and trade nutrients, create healthy soil, provide each other with defense and other services that keep the system balanced. If you don't want to wait for nature to balance a system, which can take years, there are

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RUTH STOUT 1884 to 1980

Edythe Falconer, Ottawa

Ruth Stout

It would be fun to remember Ruth Stout as a gardener who sometimes gardened in the all-together. She really did! Or we could coat-tail her to her brother Rex, author of the Nero Wolfe detective series. However it's more important to recognize her as an independent thinker who was not afraid to break away from the conventional methods of her times and venture into developing and promoting her own techniques.

Ruth planted her first garden in 1930 (age 46) at a place called Poverty Hollow, Connecticut. For several years she employed conventional ways and did all the work associated with these approaches. Eventually she began to question all the cultivating, watering, weeding – you name it –all the usual tasks we gardeners perform. Then, in 1944 (age 60), she stopped doing them. Instead she began to leave the soil undisturbed. She covered it with at least eight inches of moldy hay usually obtained from a neighbor glad to get rid of it. Silly him! She also left other vegetable matter on the surface, first as mulch, and as it rotted then compost. When planting needed to be done she pulled away surface debris, scratched the soil lightly and deposited seeds.

Her results were such that she could feed her family and guests all year round from produce she had grown herself. Her garden work did not consume her life - unless we include prolific writing, lecturing and workshops on her own property. Or if it did, it would be a life well-consumed!

Ruth never left soil surfaces uncovered. Her mulching techniques insured temperature control, weed control, and provided a good percentage of nutritional needs. These she supplemented with cottonseed or soybean meal. When asked how much hay would be required to do the job she once replied – "You need at least twice as much as you would think."

The "Mulch Queen" was still gardening in her early 90's. She passed away in 1980 at the venerable age of 96. Her legacy is multi-faceted – Live well, experiment, share your knowledge, be self-reliant and self–sufficient.

Note: Some of Ruth's books are available through Amazon and I have one hard copy of my own – "The Ruth Stout No-Work Garden Book". Googling will get you a ton of information on this organic pioneer.

No-Till, it is the way to go.

Cristina Da Silva, Mississauga

It is no secret: farming practices influence/change gardening practices. But there is one change in the farming community that has yet to be widely adopted by gardeners. No-till.

No-till is exactly as it sounds: leaving your garden beds undisturbed. Only the area where the seed or plant is located is touched. No-till translates to no seedbed preparation, double-digging, cultivating to remove weeds or working in amendments. All activities dear to a gardener's heart, annihilated.

But there are good reasons to change the way we garden. No-till improves the soil. As Master Gardeners, we know that healthy soil is the foundation of all good gardens. Under the no-till method the soil's organic matter increases and the water infiltration improves resulting in fertile, well drained soil.

And the benefits continue. Continual cover means reduced erosion, which until very recently used to be cited as the main reason to convert to no-till. Current thought, however, hails the intact fungal web and increased biological activity as the main reason why gardeners and farmers should convert to the no-till system.

For example, higher organic matter increases earthworm numbers, which leads to better soil structure. Intact fungal webs decompose wood, retain nutrients in the soil, bind soil particles into aggregates (improving the structure of soil), and compete with plant pathogens. Tilling destroys fungal webs and reduces organic matter in the soil.

The major flaw in the no-till system is the use of

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Ontario Horticultural Association and Master Gardeners of Ontario Inc.

Working Together

Here is the latest issue OHA's newsletter the Trillium.

Building Soils Naturally from page 5

things that you can do to help this process along faster which are outlined under six major topics/steps and makes up the bulk of the book.

Take Aways

- Water – All organisms need water. That's why drip irrigation doesn't work unless there is total overlap. Dried up soil has little microbial life and puts your plants at risk.
- Organic matter – explores benefits of many methods of composting, including Bokashi (anaerobic fermentation). Increasing cover crops is the most important goal for the gardener and includes arguments against tilling.
- Microbial inoculants - covers details about newer more successful methods of brewing compost teas and making activated effective microorganisms. When transitioning from an unhealthy garden to a healthy one, it takes a lot less time when these methods of providing nutrition are incorporated.
- Supplementing nutrients - organic is not about the products as much as it is about the holistic approach – working with nature. The great value here is in Nauta's experience with soil testing – why and when and how to use these. Testing makes sense if you are transitioning from an unhealthy garden to a healthy one. The only way to know the amounts and the availability of nutrients to your plants is through a Base Saturation test or a Reams test.
- Biostimulants and Micronutrients – some of the best of these come in the form of sea minerals. Also, recipes for foliar sprays are given and he recommends to always add a carbohydrate to feed the microbes.
- Energy – this can manipulated by using OM, microbes, specialty fertilizers, water, air, paramagnetic rock dust, homeopathic energizers, and radionics.

Health management rather than pest control is covered in detail in the last quarter of the book and Nauta gives a plan as a starting point. The argument goes that plant predators and weeds become a problem solely because of nutritional imbalances and an unhealthy soil food web. So-called organic pest control is just a substitute for chemicals which underscores that the basic problem lies in the way we think about plant predators and weeds; that these indicate a lack of health. Research shows how sick plants emit pheromones that invite predators to eat them. It's not known why but it may be Darwinian in that nature doesn't want the sick plants to reproduce and it may even be a strategy to save the rest of the gang..."taking one for the team" so-to-speak.

Overall, I appreciated Nauta's practical approach to topics that can get quite technical. Regarding nutrition, growing your own exceptionally nutritious food holistically means better human health. Nauta also points out that by getting natural doses of compounds rather than taking the very concentrated forms found in common pharmaceuticals, one can maintain better health and also eliminate harmful side effects that come from isolating and concentrating these compounds into drugs.

For all gardeners who want to do things better and think that they are doing everything right, they may have their eyes opened at some of the points raised in Phil Nauta's, Building Soils Naturally.

No-Till is the Way to Go from page 6

herbicides to control weeds. Herbicides would affect biological activity in the soil and contaminate the waterways. Plus home gardeners don't have access to many herbicides. Thankfully there is a simple solution. Mulch. Either mow/weed-whack down your weeds or cover crop, or pull weeds by hand in the spring. Then cover the bare soil with organic mulch. Mulch effectively controls weeds and reduces evaporation.

During the growing season, if your vegetables and annuals need more nutrients than the decomposing mulch provides, top-dress with amendments. Sprinkle the compost or other amendment around the plant, and then add mulch on top. No fuss, no digging. Did I also mention no-till is less work?

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Rodale Institute. No-till management for sustainable and organic systems. 2012

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Sjoerd Duiker and Joel Myers. Better soils with the no-till system. 2002.

Soil Conservation Council of Canada. The face and voice of soil conservation in Canada.

Permaculture

Observing and the Connecting Life Cycles Leads to Sustainability

Mary Beerman and John Montague, Durham

Permaculture is a system of ecological design striving to emulate nature's ecological systems. Formally permaculture finds its origins in the early 60's with Sepp Holzer and then in the 70's with the founding fathers, Bill Mollison and David Holmgren. They designed a system for living that incorporates age-old wisdom and practices from cultures that have existed in balance with their environment.

Bill Mollison

David Holmgren

This system, or philosophy of living, can be applied to any facet of a person's life. As a person or group moves through progressive application of these principles they begin on a personal and local level. Further application of these permaculture principles moves outwards to collective and global levels. The principles include: built environment, tools and technology, culture and education, health and spiritual wellbeing, finance and economics, land tenure and community governance, land and nature stewardship.

These seven principles are guided by the code of ethics: caring for the earth, caring for people and sharing the surplus. The tri-part code is understood through twelve universal principles or 'thinking tools'. The permaculture goal is to evolve towards sustainable living.

The thinkers behind this new-built-on-old life philosophy also consider patterns from nature broken down into fractals upon which one can build. Examples of this are spiral herb gardens and wavy edged gardens/perimeters; borrowing the pattern of sea waves. There are layers in nature to observe as well. The first layer is the highest. It is the tree canopy. The layers descend down through to understory trees, to shrubs and herbaceous plants, to the soil surface and then to the rhizosphere.

There are other 'ways' of knowing and practicing. The notion of guilds groups plants, animals, insects, etc. that work together in a beneficial arrangement or community. The edge effect considers that where systems meet there is an intensity of productivity and connections. Examples to help understand this would be the woodland edge or coastal areas; highly productive margins of ecosystems. Zones, from 0 -5, break down living areas in concentric circles; beginning with one's house and then moving out to semi-wilderness or cropland and farther to zone 5, wilderness.

There are real life applications of this ecologically-based system for living here in Ontario. Consider the implementation of composting toilets, rainwater harvesting, mulching, agroforestry (integrating trees and shrubs with livestock). The Toronto Botanical Garden's newly built parking lot is a great example of an integrated, multi-ecosystem environment. It is a sustainable parking lot that cares for the earth, cares for people and shares the surplus water and trees with others. Bill Mollison would be correct, "The problem is the solution."

May 5, 2013 is International Permaculture Day.

If You Are Not Signed Up For the MG-list You Missed These Great Discussions

editors

Plant Light Bulbs

This is not, as you might think, an activity involving a type of landfill, but a discussion on what kind of light bulbs are best for growing plants under.

Guerilla Gardening

Which is not gardening by the inmates of the zoo but a great TED talk about gardeing in the inner city.

Dormant Oil

A discussion of this magical elixir. Can it really put those bugs to sleep without hurting your pine trees?

Where Can I Get Some Skunk Cabbage.

Stand back from the Skunk Cabbage. It looks pretty but it stinks if you get some on you.

If you missed all this, too bad for you but you can correct the problem by contacting

listcoordinator@mgoi.ca