

A person is seen ziplining through a dense, lush green forest. The person is suspended in the air, moving from right to left across the frame. The forest is filled with tall trees and thick foliage, with sunlight filtering through the leaves, creating a dappled light effect. The overall scene is vibrant and natural.

# Trees and Health

Applying the Evidence

# Hats

“Specialists know everything about nothing.”

“Generalists know nothing about everything !”

Hamilton Health sciences - medically complex care and geriatrics

Shelter Health network - residential addiction treatment for men

Trees for Hamilton - planning and planting

Land Steward - learning from my mistakes

And many other roles which I know nothing, or very little about!



# Residential Inpatient Addiction treatment

Men suffering from alcoholism or substance abuse  
Choosing to live in a facility for 8 – 10 weeks !  
Often a history of trauma or mental health or incarceration  
Substance use → job loss → divorce → under housing

Intensive counselling and trauma- focused therapy

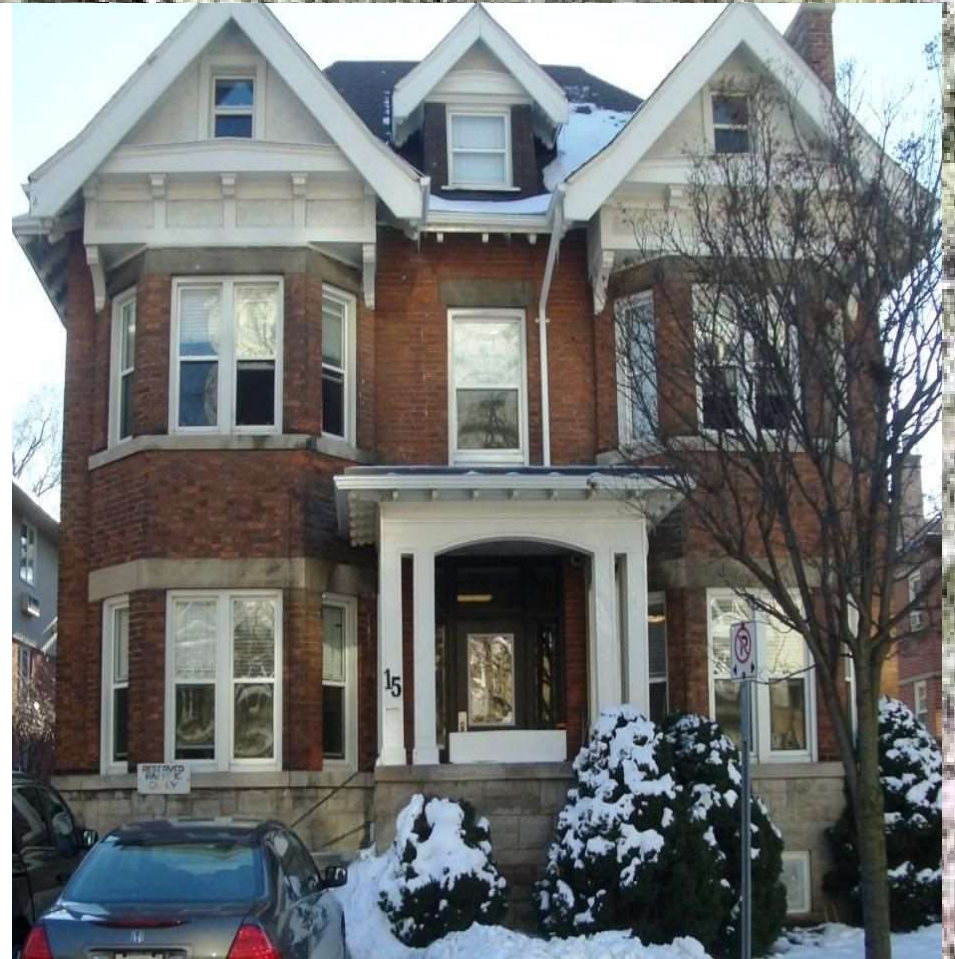
Medical services include :  
primary care  
mental health support  
addiction medicine



# Mental Health disorders

75 % of our clients have concurrent disorder:  
A Substance use disorder AND  
a Mental health disorder

- Post traumatic stress disorder
- Attention Deficit disorder
- Major depression
- Anxiety
- Psychotic disorder
- Anger/conduct disorder



## Medically Complex – St Peter's within HHS

- Usually frail elderly
- Dementia care unit
- Rehabilitation unit
- Medically complex unit
- End-of-life care (palliative)

33% are depressed post-stroke



The prettiest hospital in Hamilton !

## Vulnerable populations

There is a theme here ... “vulnerable populations”

Homelessness / frailty / addictions / mental health

Essentially, healing of the sick and/or marginalized

Both jobs can be stressful ... I needed a hobby !

sugar maple

# Trees for Hamilton - origins

- Wanted to farm ... bought a farm
- knew nothing about farms (or business)
- fascinated by trees/forests since boyhood
- started planting 400 bare root trees per year
- got to 2000 quickly – didn't want to sell them!
- so, we became “land stewards”
- and ran out of places to plant
- started planting on my neighbours' properties



# ReLeaf Hamilton

- Lorraine Moir (Norminton) co-founded ReLeaf Hamilton. Here she is →→→
- A stakeholder group which mapped the Natural heritage areas in Hamilton
- Sadly, Hamilton has only 19 % tree cover
- Environment Canada recommends > 30 %
- Hamilton needs 1 million more trees !





# Tree Charity

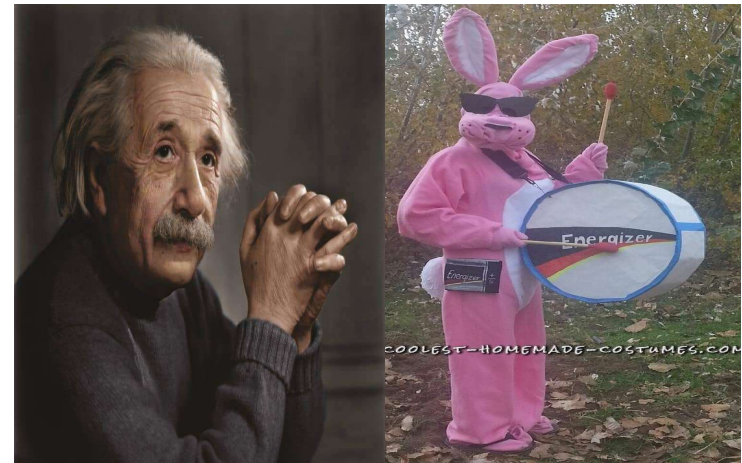
Lorraine, via MNRF, had helped at our farm with soil sampling  
There were no more places to plant on my neighbours' farms

Was there a need for a community tree charity ?

Yes indeed !

We founded a not-for-profit in 2012

- Lorraine was the brains
- Myles was the bunny



## Health Benefits of Trees

Conditions which benefit from Tree/green exposure :

- Depression, Anxiety, ADHD, Anger/conduct disorder
- Heart disease, hypertension, T2 diabetes (prevention), lung disease, skin cancer, heat exposure, and improved immune function
- [www.greenhealth.washington.edu](http://www.greenhealth.washington.edu) University of Washington – summary of last 40 years of studies on trees and human health
- **Every tree planting charity benefits human health !**

tamarack

# Trees for Hamilton – the early years

- **“Native trees, in areas of need, for the betterment of health “**
- In 2012, planted at several land stewards’ properties
- 100 trees in April
- 50 trees in October
- Small BOD of 3 people



Me and the boys - Fall 2013

# TFH - the next few years



We were getting a bit bigger every year.

A tree charity needs 3 things – **money**, **places** to plant, and **volunteers**.

- **\$\$** - Private donations and then Charitable status in 2015 (grant \$)
- **Places** - City parks, Royal Botanical Gardens, local farms, and the Hamilton Conservation Areas
- **Volunteers**- High school students, McMaster students, Church group, BOD

# Rosebough Park - Fall 2014



High school volunteer hours

2015, and more volunteer hours...



Royal Botanical Gardens – Fall

50 Point C.A. – Springtime



# Lutheran youth group - C. Area - Fall 2015



Approached by a new group for the first time !

# Air and Tree Task Force, Hamilton

There are other tree planting groups in town, including:

Forestry Hamilton, Environment Hamilton, Hamilton Naturalists Club

And other interested parties.. City of Hamilton planning department, Hamilton Public Health, McMaster Public Interest Research Group, and Friendly Streets Hamilton

We meet every 3 months to stay in synch and share ideas.





# Health is our niche



So, let's be more intentional about the health connection.

There are at least 3 different ways we do this...

- #1 facilitate patients exercising in natural landscapes
- #2 bring the forest to the patient (health care sites)
- #3 educate about trees and health and climate and health



## Intention #1 - Exercise in natural environments

Kaplan and Kaplan described **restorative environments** as those settings that foster recovery from mental fatigue (1989)

Hartig found that mental fatigue was most successfully relieved by **a walk in a natural setting** (1991)

Mitchell found that mood improves with **activity in Natural Environments** more than in a gym ! (Scottish Health Survey- 2008)

**Exercise-, nature- and socially interactive-based initiatives improve mood and self-esteem** in the clinical population – ( Barton, 2011)

# Mental health

Mental Health disorders which benefit from green exposure:

- PTSD \*
  - ADHD \*
  - Depression \*
  - Anxiety \*
  - Psychotic disorder
  - Anger / conduct disorder \*
- The same list as my clients !



# Mount Albion CA – Fall 2015



outdoor exercise, education, teamwork, contributing to society

# McQueston Urban farm – spring 2016



10 gallon serviceberries, planted in clay

## Valen's Conservation Area – spring 2018



“I can’t believe how fast we planted like 100 trees !” “It was fun..”

# Addiction Clients planting in Natural Environments

- “..it was a fun, supportive and helping experience”
- “..a good feeling doing something that was nice for others”
- “I learned about native trees and why they are important”
- “I don’t usually do sober activities – I enjoyed myself”
- “I had a great time working with the other guys”
- “It was nice to be outside. I had fun and would do it again”
- “I felt great doing it”
- ..a healing experience



50 Point CA - 2017

## Intention #2 - Bring the forest to the patient

Surgical recovery rates improve with a view ! (Ulrich ,1984)

Death of Ash trees (EAB) resulted in increased heart and lung mortality (Donovan, 2013)      Yes, Trees are another vulnerable population !

Elderly people with park access report having better health . (Payne, 2005)

Proximity to greenspace results in reduced symptoms for depression and anxiety . (Beyer, 2014)

[www.greenhealth.washington.edu](http://www.greenhealth.washington.edu) University of Washington – summary of last 40 years of studies on trees and human health



# Trees and Health Care facilities

- Hamilton General Hospital  
- April 2018
- Better to look at trees than  
at a brick wall (Ulrich)



Brick walls



V.P. + Tamarack



# Extendicare LTC - spring 2017 Staff, residents, doctors



Eastern redbud - birds



# Alexander Place LTC – fall 2016 and 2018



## Intention # 3 – Education: Trees+health, climate change+health

The major determinants of health may have little to do with the health care system.  
(Hancock, 1999)

Scientific evidence for warming of the climate system is unequivocal.  
(Intergovernmental Panel on Climate Change, 2018) [Are there still deniers ? ?](#)

Tackling climate change could be the greatest global health **opportunity** of the 21st century.  
(The Lancet, Medical Journal, 2015)

Climate change is the greatest **challenge** of the 21st century, threatening human health and development. (World Health Organization, 2018)

Education: Health care workers, and other sectors, need to help with climate issues.  
If you are healing the planet, you are healing people.

# Conservation, spring 2016 -16 family doctors + 180 trees



Some donations, some regular planters, and a connection to other groups

# Dundas Conservation Area - fall 2018



Wear Gucci boots, work hard and chat about trees and nature.

# Spade vs Stethoscope

Is a spade more beneficial to human health than a stethoscope?

Climate change is a much bigger global public health issue than opioid addiction.

- **How do we connect people with trees ?**

Find inner city health care facilities as a partner.

Plant with a patient group(s).

Try to get different sectors involved.

**We all need to be healers to heal our planet !**





# Trees for Hamilton in 2021

- 6 plantings in Spring 2021
- HGH and Public health residents
- Vanier Towers and my family
- Sikh temple and BOD and a funder
- RBG arboretum and Medical students
- Adelaide Hoodless School – 4 trees, and 4 agencies!
- Hamilton Mountain Mosque and youth group and GV



# Trees for Hamilton in 2021

- 7 plantings in Fall 2021
- City Park with GV and the City - 300
- St Peter's Hospital with staff 12
- Adelaide Hoodless School , students? 6
- Valen's Conservation Area, Med Students 300
- St Joseph's Hospital with staff 12
- Binbrook CA with Airport staff 30
- McMaster Forest with Mac students 200



## TFH Board of Directors



- Thank you for your time and thanks to our BOD
- **Lorraine Moir** – Biologist, tree specialist, co-founder
- **Rob Booth** – Environmental engineer, conservationist, humorist
- **Simon Liang** - Tree enthusiast, chartered accountant, the Muscle
- **Shelley McKay** – Communications, fundraising, photography
- **The doc** – this and that

[treesforhamilton.ca](http://treesforhamilton.ca)

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Trees cleared in the western Amazon region of Brazil in September 2017

## Conflicting Data: How Fast Is the World Losing its Forests?

*The latest UN report on climate says reducing deforestation is crucial to slowing global warming. But researchers must first reconcile two contradictory sets of statistics on tree loss in order to determine whether promises made by nations to protect and restore forests are on target.*

The world is losing trees faster than ever. An area the size of Italy disappeared last year. Or did it? New research suggests three-quarters of those lost forests may already be regrowing. That hardly means we are out of the woods. Fighting climate change and protecting biodiversity still needs a global campaign to reforest the planet. But it does suggest that, given the chance, nature will do much of the work.

This week, a [special report](#) of the UN's Intergovernmental Panel on Climate Change (IPCC) confirmed the vital role that ending deforestation can play in holding global warming to 1.5 degrees Celsius. To underline the point, the UN's environment, development, and agriculture chiefs issued a [joint statement](#) declaring that "forests are a major, requisite front of action in the global fight against catastrophic climate change – thanks to their unparalleled capacity to absorb and store carbon. Stopping deforestation and restoring damaged forests could provide up to 30 percent of the climate solution."

But behind the challenging words lies a yawning data gap. For we still know remarkably little for sure about the true extent of deforestation and its contribution to carbon emissions and climate change. As Peter Holmgren, then director-general of the Center for International Forestry Research in Indonesia, [put it last year](#), the existing deforestation data is of "low quality," relying either on satellite imaging that is "shallow, ambiguous, and generally incomparable" or on government data that may "under-report deforestation for political reasons."

Researchers say we urgently need a way out of the statistical quagmire. And this year the first tentative steps at resolving the data crisis have been taken.

While both databases focus on the extent of tree cover, neither addresses changes in biodiversity or the carbon uptake of forests.

There are two main data sources for tree loss, and they are increasingly contradictory. One, the Global Forest Watch (GFW), is compiled from satellite images by the World Resources Institute, a Washington think tank. It paints a gloomy picture, putting the decline in tree cover last year at 72.6 million acres, almost 50 percent more than in 2015. That analysis is supported by on-the-ground observations, especially in Southeast Asia, where forest continues to be converted to oil palm.

The other main source for deforestation data, the Global Forest Resources Assessment (FRA), which is compiled from government inventories by the Rome-based UN Food and Agriculture Organization, is less bleak. It estimates the annual net loss, once forest regrowth is taken into account, at barely a tenth as much: just 8.2 million acres. And it says deforestation rates have declined by more than 50 percent in the past decade.

The drastic difference extends to data from individual countries. In the United States, China, Australia, Canada, Russia and several other countries, the FRA shows forests gains while the GFW shows big losses, [says Holmgren](#).

The two datasets were more or less in agreement 20 years ago, but have been diverging ever since. So how have such huge differences arisen? And which, if either, is right?

On the face of it, the satellite-based GFW is more rigorous. It asks a simple question of the Landsat images it analyzes: What area of tree cover has disappeared since last year? It does not ask how or why, just how much. The FRA data, on the other hand, is largely a measure of registered land use rather than actual tree cover. For instance, its definition of a forest includes areas that may be treeless as a result of logging, but where governments still classify the land as productive forest that is expected to regrow and be logged again.

