

Annual Report



2020/2021



VISION: Severn Sound will be the most resilient and thriving Great Lakes watershed.

MISSION: At SSEA, we are committed to ensuring exceptional environmental quality and exemplary stewardship of the Severn Sound area through sound science, collaboration and partnerships.

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MESSAGE FROM THE BOARD CHAIR



Board Chair
Steffen Walma

Songwriter Bob Dylan's 'The Times They Are a-Changin'' could certainly be the soundtrack of our lives for the past two years. But through it all, the Severn Sound Environmental Association, our staff and Board – have adapted to the challenges while not only meeting the needs of our watershed municipalities, but also increasing in many program areas the deliverables required to make our region the great place it is to live, work and play. These services are critical to the sustainability of our area.

Hats off to the Board and Staff for being so adaptive in such an uncertain time. As a Board, we continued to improve our governance and public transparency passing both our Board Code of Conduct and a Rules of Procedure. Our staff continue to provide exceptional service to our member municipalities and our ratepayers. We enhanced our ability to deliver important information to our constituents with more on-line meetings and presentations, increased YouTube and educational videos, and a greater social media presence. The Times They Are a-Changin' and so has SSEA.

A handwritten signature in blue ink, reading 'Steffen Walma'.

MESSAGE FROM THE EXECUTIVE DIRECTOR



Executive Director
Julie Cayley

On March 17th 2020, SSEA's office doors closed due to the COVID-19 pandemic. Our amazing team pivoted SSEA's programming to ensure the needs of our municipal partners were met while we worked from home surviving this global crisis. Our online presence increased and helped us connect with a broader Severn Sound community. When the laboratories closed and our monitoring had to pause, our staff quickly expanded our citizen science programs empowering our community and ensuring we still had observers on the landscape. With remote work and the increased external funding available during the pandemic, we were able to double the opportunities for young people to join Team SSEA and build skills for their future careers.

This global pandemic has really underscored the need for healthy ecosystems, for clean water and healthy natural areas for people to access for physical and mental health. What you will see in this report are highlights of the amazing level of service that Team SSEA has provided during the pandemic. Thanks to all of you, we have adapted and expanded together!

A handwritten signature in blue ink, reading 'Julie Cayley'.

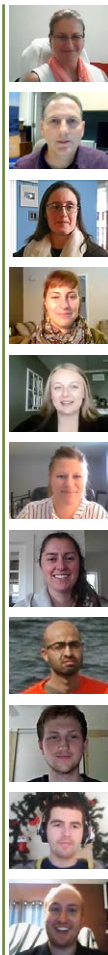
BOARD:

	Deputy Mayor (Chair) Steffen Walma Twp. of Tiny*	
	Councillor (Vice Chair) Paul Wiancko Twp. of Georgian Bay*	
	Councillor Carole McGinn Town of Midland	
	Councillor Ian Veitch Twp. of Oro-Medonte	
	Deputy Mayor Anita Dubeau Penetanguishene	
	Councillor Ron Stevens Twp. of Severn*	
	Councillor Perry Ritchie Twp. of Springwater	
	Councillor [2021] Paul Raymond Twp. of Tay	
	Councillor [2020] Jeff Bumstead Twp. of Tay	

Board Executive denoted by *

STAFF:

F = Permanent
Full Time
P = Part Time
C = Contract



Julie Cayley
Executive Director (F)

Lex McPhail
IT/GIS Manager (F)

Aisha Chianet
Water Scientist (F)

Paula Madill
Ecosystem Technologist (F)

Nikki Priestman
Watershed Health
Coordinator (C)

Tracy Roxborough
Sustainable Severn Sound
Project Coordinator (C)

Shannon Mawhinney
Watershed Resilience
Coordinator [2021] (C)

Nikolas Kuchmij
Climate Action
Program Coord. [2021] (C)

Benjamin Lehan
Env. Intern [2021] (C)

Mike Rogers
Aquatic Plant Mgmt.
& Env. Tech. [2020] (C)

Zackary Fryer
Cit. Sci. & Communications
Assistant [2020/21] (C)



Judy Limoges
Treasurer (P)

Melissa Carruthers
Risk Management
Official/Inspector (F)

Morgan Gillies
Healthy Soils = Healthy Watersheds
Program Coord. [2021] (C)

Michelle Hudolin
Wetlands and Habitat
Biologist (F)

Tamara Brincat
Invasive Species
Program Coord. (F)

Robert Canning
Invasive Species
Program Coord. [2020] (C)

Nicole Stott
IS Mgmt. Tech. &
Biodiversity Intern [2021] (C)

Cameron Epp
Invasive Species
Tech. (OFAH) [2020/2021] (C)

Emily Edgely
Env. Field Tech & Cit. Sci.
Pgm Assistant [2021] (C)

Sean Ryan
Fish & Wildlife
Technician [2020] (C)

Peter Tiller
Cit. Sci. Assistant [2021] (C)

SEVERN SOUND WATERSHED AND JURISDICTIONAL AREA

LEGEND

- * SSEA Office
- Severn Sound Watershed
- Upper Tier Boundary
- SSEA Municipalities
- S** In Simcoe
- G** In Muskoka
- Municipal Areas Outside Severn Sound
- W** In Simcoe
- G** In Muskoka
- O** Orillia
- L** Lake
- R** Creek/River
- 400** Major Hwy



Produced by the Severn Sound Environmental Association with data supplied in part from the County of Simcoe, the Ontario Ministry of Mines, Northern Development, Natural Resources and Forestry (© Queen's Printer 2022) and under license with members of the Ontario Geospatial Data Exchange, 2022. Any party relying on this information does so at their own risk.

STRATEGIC PLAN PROGRESS HIGHLIGHTS

Sound Science

Build Scientific Knowledge & Understanding

- Produced factsheet on blue-green algae & shoreline stewardship for Severn Township on actions landowners can take to improve environment.
- Developed Raw Water Assessment Report in support of Tay Township's drinking water license renewal.
- Presented updates to member municipalities on Drinking Water Source Protection.

Build Resilience Across Severn Sound

- Provided information to municipalities to assist with planning and emergency preparedness related to flooding.
- Expanded the SSEA brand awareness by conducting media interviews on: citizen science, chloride levels, Drinking Water Source Protection, Spongy Moth and other invasive species.
- Contributed articles on shoreline stewardship for Honey Harbour Association & Gloucester Pool Cottage Association magazines.

Commit to Filling Knowledge Gaps

- Provided training on identifying blue green algae blooms to Tay Township water treatment plant operators.
- Began work to identify, value and account for natural assets in municipal financial planning and asset management programs.
- Developed Severn Sound Invasive Species Strategy including review of current monitoring and management techniques.

Supportive Partnerships

Strengthen Existing Partnerships

- Inventoried invasive species at public parks, beaches, shorelines and roads to help municipalities strategically control priority species.
- Mentored Georgian College student in producing Orr Lake Shoreline & Recreational Use Study and Habitat Survey.
- Worked with agricultural community to establish Healthy Soils = Healthy Watersheds Project.
- Severn Sound Agricultural Advisory Committee established.

Build New Alliances

- Secured support from Georgian Bay Métis Council for funding proposals.
- Promoted ecological literacy as member of Georgian College's Environmental Program Advisory Committee.
- Worked with Environment & Climate Change Canada to identify important science and monitoring needs.

Empower Others to Act

- Continued Ice Spotters and Water Level Watch citizen science programs.
- Delivered Shore Watch and Stream Watch including production of 1 educational and 8 training videos, as well as, creation and delivery of monitoring kits.
- Signed up 29 new citizen science volunteers.
- Developed Invasive Species Spotters citizen science program.

Engaged & Informed Community

Address Priority & Legacy Issues

- Supported municipal delegation at Association of Municipalities of Ontario conference on Great Lakes Water Levels – Shoreline Community Resilience.
- Produced the fact sheet, “Minimize Your Impact and Protect Your Shoreline.”
- 12 information videos uploaded to YouTube.

Enhance SSEA Profile & Visibility

- Improved social media presence through Instagram, Twitter & Youtube.
- Created 4 videos on how the Severn Sound Source Protection Authority and local citizens can protect drinking water.
- Co-hosted ‘Severn Sound - Value of Investing in Water Quality’ webinar with Canadian Environmental Law Association.
- Shared environmental monitoring information locally and regionally through webinars and conference presentations including H2O 2021 and Our Health: Taking on the Environment.

Learn from others

- Continuously assessing environmental monitoring methods and data reporting protocols to provide the best possible information to stakeholders in an efficient and cost-effective way.
- Collaborating with environmental organizations to address information gaps.
- Attended webinars, conferences and other learning opportunities to advance local skillsets and knowledge.

Exceptional Organization

Consistently Deliver Exceptional, Exemplary service

- Expanded on-line video content, including SSEA Board Meetings & education videos.
- Partnered with local Orillia Realtor, Marci Csumrik and Associates to create 3 environmental educational videos.

Commit to a Culture of Continuous Improvement

- Board approved Board Code of Conduct and Rules of Procedure.
- Staff completed Truth and Reconciliation training sessions.
- Growing citizen science program to enhance data, and engage & empower people.

Be an Employer of Choice

- Networked with post-secondary institutions to provide intern and summer placement opportunities for young environmental professionals.

For a copy of the SSEA Strategic Plan 2018-2023 visit: www.severnsound.ca/about/meetings and select “SSEA Strategic Plan 2018-2023”

2020**52**

Sites Sampled

190

Samples Collected

ENVIRONMENTAL MONITORING

SSEA delivers a wide variety of monitoring programs and data to empower municipal governments to pro-actively protect natural resources for their constituents. These programs include monitoring open waters of Severn Sound, evaluating inland lakes, assessing stream quality, checking groundwater quality and quantity, tracking climate change via precipitation and air/stream temperature, as well as, inventorying and removing invasive species.

2021**52**

Sites Sampled

360

Samples Collected

Severn Sound Open Water

Water quality, and algae and zooplankton communities are monitored biweekly through the ice free season across Severn Sound in order to track trends and ensure water quality targets are being met.

- Presented to International Assoc. for Great Lakes Research 2020: *Climate Change, Invasive Species and Nutrients as Drivers of Plankton Dynamics in Severn Sound*
- Monitored 16 stations throughout Severn Sound; total of 248 samples collected over the two years



Collecting Zooplankton



Taking a composite sample

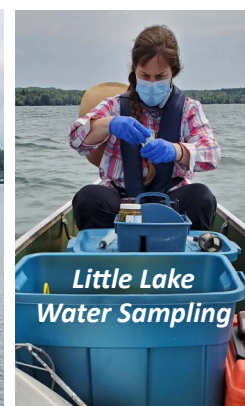
Inland Lakes

There are 5 inland lakes in the Severn Sound watershed that are sampled on a 5 year rotating basis for water quality, and algae & zooplankton communities.

- Little Lake, (Midland) is sampled annually
- Winter water sampling through the ice on Orr Lake (Springwater Twp.) and Farlain Lake (Tiny Twp.) [2021]
- Presented to Ratepayer Associations including Bass Lake Ratepayers Association AGM on Natural Shorelines [2020] & water quality draining into Bass Lake [2021]
- Conducted shoreline, water quality & sediment survey of Orr Lake [2021]



Orr Lake Survey



Little Lake Water Sampling

Provincial Water Quality Monitoring Network

- Partnered with the Province to monitor major rivers for general chemistry, nutrients and metals, to determine seasonal and annual trends
- Monitored 12 stations throughout the watershed: Hogg Creek (2), Coldwater River (2), North River (2), Sturgeon River (1), Copeland Creek (1), Wye River (3) and Severn River (1)
- 6 sample runs in 2020 & 8 in 2021 for a total of 672 individual samples collected over the two years

Provincial Groundwater Monitoring Network

- Data loggers installed in 9 wells throughout watershed, that measured hourly water levels and temperature
- Annual water sampling at 6 wells for chemistry, nutrients and metals, to gain insight on the aquifer quality and trends (total of 18 samples)
- Installed new tipping-bucket rain gauge for long-term groundwater monitoring well on Ingram Side Road, Twp. of Oro-Medonte

Sampling at Sturgeon River site



Probe to measure parameters



Ingram Well rain gauge

Well water level and sample collection



Climate Monitoring - Rain Gauges

- Participated in panel “Straight Talk - Climate Change on Your Doorstep” hosted by Midland Cultural Centre
- Installed new remotely operated weather stations in Midland (2020) and Lafontaine (2021)
- Compilation and analysis of rain data completed to 2020
- Data collection download and compilation from 5 rain gauge stations, 2 air temperature stations and 37 stream temperature logger stations

**Air Temp.
& Rain gauges
at Huronia Airport**



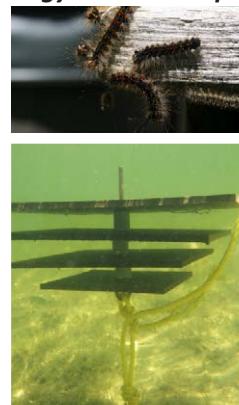
**Weather
Station
near
Lafontaine**



Invasive Species Surveys

- Production and distribution of annual Municipal Invasive Species reports for municipal partners
- Partnered with Friends of Wye Marsh to manage Phragmites & Farlain Lake CA to manage Eurasian Water Milfoil
- 43 sites surveyed for invasive species in 2021
- 5 spongy moth egg mass surveys completed across the watershed to provide potential defoliation forecast for 2022
- 19 locations surveyed for the invasive macroalga starry stonewort (presence/absence) with 9 locations positive

Spongy Moth Caterpillar



**Bass Lake,
Invasive Snails**

**Invasive mussel surveillance
in Little Lake, Midland**

Stream Temperature Monitoring

Changes in stream temperature can be an indication of the stability and classification (i.e. warm, cool or cold) of stream habitat for different fish species.

- Thermal stability modelling of 2019-2021 water temperature data to support trend analysis completed
- For the past 22 years, SSEA has collected stream temperature logger data from over 360 locations throughout the watershed
- In 2020 there were 37 stream temperature sites & in 2021 there were 45 stream temperature sites monitored

Installation of Temperature Logger & Housing



Tributary Benthic Macroinvertebrates

Benthic macroinvertebrates (BMIs or “Bugs”) are organisms that live in waterbody sediments, are visible to the naked eye and lack a backbone. They are essential to aquatic ecosystems, feeding on organic matter, and providing a vital food source for fish. BMIs are indicators of local water quality conditions because each family has a fixed habitat preference, limited mobility and varying tolerances to pollution, thus their presence or absence is used to indicate localized stream health.

- 24 long-term stream stations sampled biennially
- 216 samples processed in 2020-2021 for a total of 42,325 bugs identified
- 246,336 bugs identified over program (1996-2021)



**“T” Sample
Apparatus**



Picking and Counting Bugs

2020**355,620** Trees
in the Ground since 1997**23** Municipal Water
Systems Assessed
for Threats**2** Invasive Species
Management Projects

LAND & WATER STEWARDSHIP

SSEA and its many partners work towards building resilience in the Severn Sound Area through projects designed to protect our critical land and water resources. Initiatives include the Tree Planting and Tree Seedling Distribution, Drinking Water Source Protection, Risk Management Official Services, Invasive Species and Healthy Soils = Healthy Watersheds (HS=HW) programs.

2021**367,600** Trees
in the Ground since 1997**28** Municipal Water
Systems Assessed
for Threats**10** Invasive Species
Management Projects

Drinking Water Source Protection

- Led municipal Drinking Water Source Protection 101-sessions for municipal partners
- Supported Oro-Medonte, Midland, Springwater and Severn with changes to municipal drinking water systems and updates to Assessment Reports and Drinking Water Source Protection Plan

Risk Management Official Services

- Commented on 98 development applications (31 in 2020, 67 in 2021)
- Answered 74 inquiries from municipal staff and members of the public (31 in 2020, 43 in 2021)
- Attended 7 pre-consultation meetings (2 in 2020, 5 in 2021), conducted 5 site visits (4 in 2020, 1 in 2021), & signed 3 risk management plans.



Trees Program

Volunteers and community groups play an important role in dealing with climate change. By planting native trees and shrubs at strategic sites throughout Severn Sound watershed, forest cover is increased to cool the region, wildlife habitat is enhanced, and water quality is improved as plantings act as natural bio-filters for runoff entering local watercourses.

While the pandemic interrupted tree activities in 2020, the Program took root again in 2021 with 282 participants planting 11,200 seedlings. SSEA along with community volunteers planted another 780 native seedlings thanks to Simcoe County.

Tree corridor planted in 1991 along Hogg Creek



Photo Source: Lofty Shots

Healthy Soils = Healthy Watersheds

Through a Great Lakes Local Action Fund grant, the Program promoted and implemented management actions designed to help soil health in targeted areas of Severn Sound watershed, improving long-term water quality. Priorities included identifying and implementing increased soil sampling and the use of cover crops to improve soil health and reduce nutrient loss.

- 7 participants signed up for the Program
- 300+ acres of cover crops planted and 140+ soil samples were collected
- Great Lakes Local Action Fund and the Twp. of Tiny funded new Lafontaine Weather Station



*The Honourable MPP Jill Dunlop
announces HS=HW Program*



*HS=HW Prog. Coord.
presents virtually to students*

SSEA Agricultural Advisory Committee

- Established by Ag. Community & SSEA Board in 2021 to communicate with & expand services to the farming community

Invasive Species Program

- Participated in provincial working group, as well as, contributed to provincial Invasive Species (IS) Best Mgmt. Practices, training, lending equipment and species identification services to municipalities & landowners looking to remove IS
- Worked with municipal partners to recruit and coordinate volunteers to assist with IS projects
- 100+ volunteers involved in community IS Management
- 330 hours spent on management (including volunteers, SSEA & municipal staff)



Volunteers removing invasive phragmites along a roadside

2020**31** Development
Applications Reviewed**>30** Municipal Staff &
Public Inquiries Answered

PLANNING & EVALUATING

SSEA staff works diligently with member municipalities to protect the natural elements that keep drawing people to Severn Sound. This includes site plan reviews, wetland evaluations and ensuring the safety of municipal drinking water.

2021**61** Development
Applications Reviewed**>50** Municipal Staff &
Public Inquiries Answered

Land Use Planning & Review

- Identified research opportunities (e.g. Natural Heritage, Ecological Economics & Natural Capital)
- Explored opportunities to enhance expertise in emerging areas like stormwater management, hydrology, land-use planning, fisheries and Species At Risk
- Submitted summary of monitoring data & associated sampling station metadata to County of Simcoe Municipal Comprehensive Review, along with comments on Watershed Mgmt. & Natural Heritage

Policy Review & Comment

- SSEA joined a number of working groups in order to better assist municipalities and landowners deal with potential impacts of climate change
- Reviewed/commented on over 15 Environmental Registry postings, proposed provincial policy, municipal Official Plan updates and municipal projects/proposals



SUSTAINABLE SEVERN SOUND

Sustainable Severn Sound (SSS) is a special project of the SSEA. The goal of the SSS project is to advance the adoption of practices and policies within municipal operations to support climate change action, greenhouse gas mitigation and sustainable communities.

Project Highlights

- SSS officially became a part of SSEA in 2020
- Welcomed newest member, the Township of Springwater
- Engaged Georgian Bay Township in the new Depave Paradise Project, a Green Communities Canada initiative
- Supporting SSEA members who are a Bee City
- Finalized the Bee City restoration report for the Town of Midland with one site chosen and restoration initiated
- Assisted Midland staff in removing woody invasive plants before the site was tilled & seeded with a native wildflower mix

SSEA Staff and Volunteers at Tiny Twp. Depave Paradise event



SSEA Sustainability Coord. Co-hosting Pollinator workshop



2020**15** Workshop & Conference Presentations**4** Programs designed to empower Citizens**>100** Attendees at SSEA In-person or Remote Events

INFORMING & ENGAGING COMMUNITY

With public safety of utmost concern, but understanding the need to provide watershed municipalities and citizens with information to protect the region's local environment, SSEA turned to virtual presentations.

As well, SSEA produced numerous information pieces for the public on Invasive Species including Eurasian Water-milfoil, Phragmites, European Water Chestnut and the Norway Maple.

2021**12** Workshop & Conference Presentations**5** Programs designed to empower Citizens**>100** Attendees at SSEA In-person or Remote Events

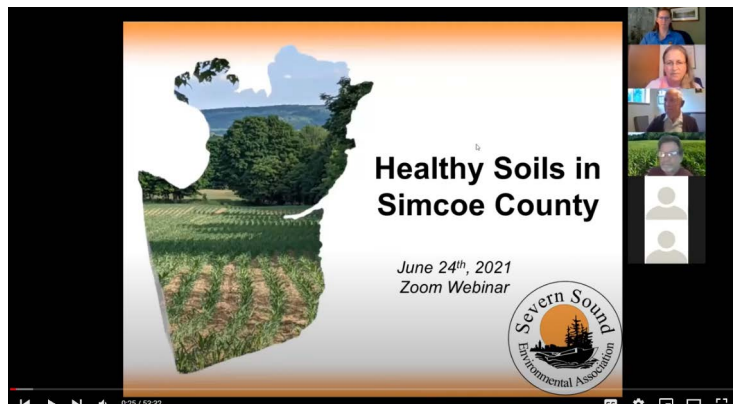
Workshops, Conferences & Presentations/Webinars

- Farlain Lake Community Association's Annual General Meeting re: How to control invasive Eurasian Water-milfoil (EWM) and Spongy Moth
- Lake Huron Centre for Coastal Conservation's conference re: "Rehabilitating Coastal Habitat in Severn Sound" (Penetanguishene Waterfront Park Rehabilitation Project)
- Webinars highlighting the value of investing in water quality, & for local municipal staff on Natural Asset Inventory and Valuation

Citizen Science Programs

- TD Friends of the Environment Foundation (FEF) & Lake Huron Georgian Bay Community Action Initiative grants received to expand Citizen Science Programs
- Educated volunteers across citizen science programs including Shore Watch, Stream Watch, and Invasive Species Spotters, through educational and training webinars
- Introduction of new citizen science program, Invasive Species Spotters, monitoring for 2 target species - spongy moth and starry stonewort

TD FEF Cheque presentation supporting SSEA Citizen Science Program



Education and Mentorship

- Secured Canada Summer Jobs funding for 5 [2020] and 9 [2021] positions, and Biotalent & ECO Canada funding for 4 internships
- Facilitated Georgian College student project on road salt usage in Lafontaine Creek subwatershed



SSEA CSJ Staff featured in "Did you know?" video collaboration series with Southern Georgian Bay Chamber

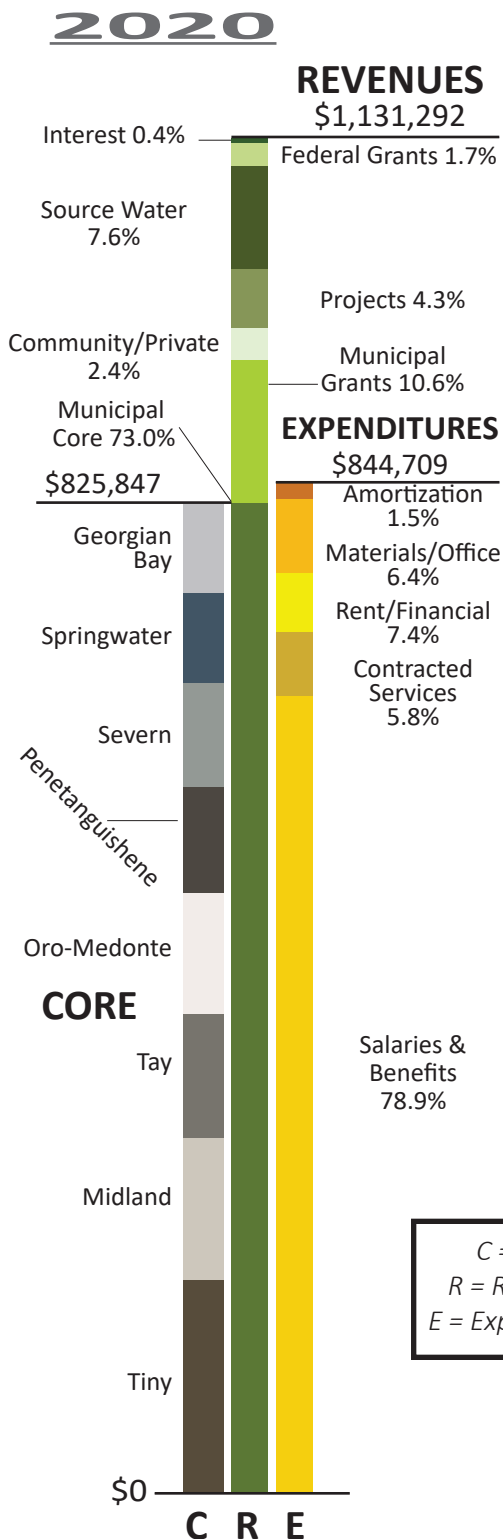
MP Bruce Stanton remotely meeting SSEA CSJ Staff



SSEA Job Fair & CSJ recruitment video

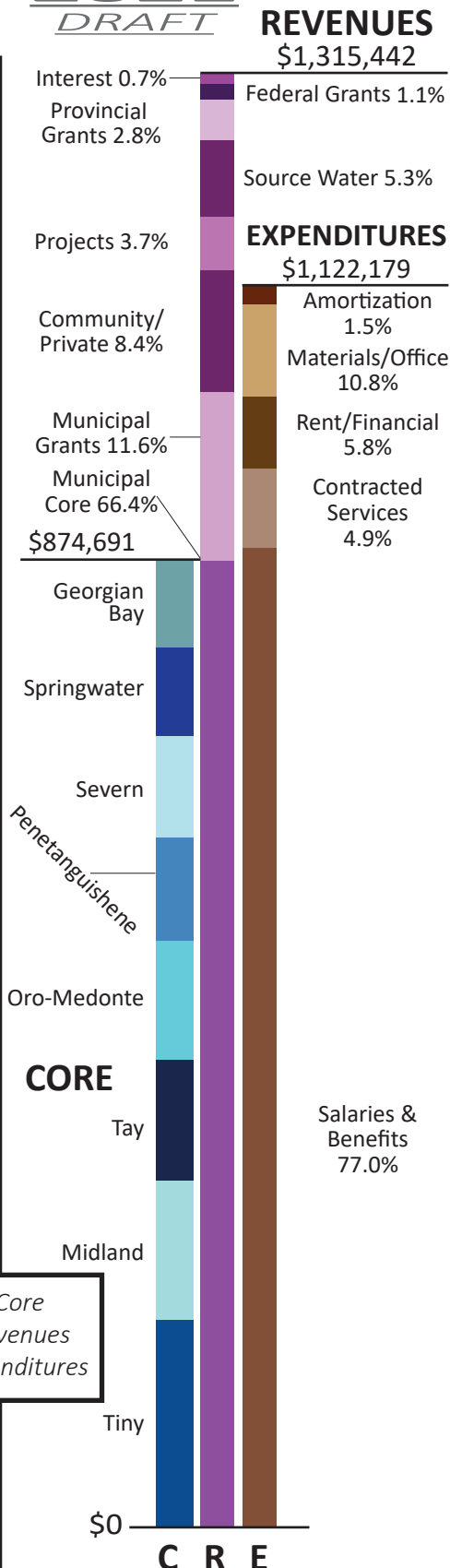
FINANCIAL SUMMARY

SSEA Operations



Note: The 2020 excess revenues over expenditures of \$286,583 (\$1,131,292 - \$844,709) is included in the SSEA accumulated surplus @ December 31, 2020 which consists largely of the investment in assets, reserves, unrestricted deficit and offset by employee future benefits. As per 2020 audited financial statements.

2021
DRAFT



Note: The 2021 excess revenues over expenditures of \$193,263 (\$1,315,442 - \$1,122,179) will be included in the SSEA accumulated surplus @ December 31, 2021 which consists largely of the investment in assets, reserves, unrestricted deficit and offset by employee future benefits. The 2021 financial statements have not been audited and therefore may be subject to change.

KEY PARTNERSHIPS

- Ausable Bayfield Conservation Authority
- BioTalent Canada (2 grants)
- Canada Summer Jobs (grant)
- County of Simcoe
- ECO Canada
- Farlain Lake Community Association
- Forests Ontario (2 grants)
- Francophone, Métis and First Nation communities
- Ganawenim Meshkiki Eastern Georgian Bay Initiative (2 grants)
- Georgian Bay Association
- Georgian Bay Forever
- Georgian Bay Métis Council
- Georgian College
- Great Lakes Local Action Fund (grant)
- Green Communities Canada
- Huronia Community Foundation
- Invasive Species Centre
- Lake Huron Georgian Bay Community Action Framework (grant)
- Lake Simcoe Region Conservation Authority
- NT Power
- Near North Enviro-Education Centre
- Orillia Area Community Development Corporation (CDC)
- Orillia Realtor, Marci Csumrik and Associates
- TD Friends of Environment Foundation (grant)
- Wye Marsh Wildlife Centre

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& YouTube

