Growing Community Engagement & Education to Reduce Emissions through Sustainability & Solar Energy

Submitted to the Mount Allison Students' Union Green Investment Fund

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EOS ECO-ENERGY ÉCO-ÉNERGIE

MASU MOUNT ALLISON STUDENTS' UNION

THE SACKVILLE COMMUNITY GARDEN

Introduction

EOS Eco-Energy is a Sackville-based environmental charity with over 20 years of experience who focuses on helping local communities adapt to and mitigate climate change. With this project, EOS enhanced previous natural infrastructure projects such as food forests and the Sackville Town Hall green roof through community engagement, workshops, and volunteer efforts. These initiatives aimed to improve maintenance, expand plantings, and maximize environmental benefits such as carbon sequestration and improved harvests. EOS also supported the Sackville Community Garden with the coordination and execution of sustainable gardening workshops, food preparation activities, and solar energy technology installations to power tools and events.

With the help of the Mount Allison Student Union Green Investment Fund (MASU GIF), EOS Eco-Energy was able to conduct hire a Community Garden and Green Spaces Coordinator to perform summer and fall maintenance of local green spaces, as well as provide a coordinator and labour role for the Sackville Community Garden (SCG). The green spaces that were maintained included Sackville Town Hall's green roof, the Marshview Middle School (MMS) food forest, the Dorchester Consolidated School (DCS) food forest, and the Sackville Community Garden grounds and food forest. Monitoring and maintaining these sites, especially while still so young (MMS 2023 and DCS 2021), contributes towards proper growth and establishment of the plants so that they can surpass weed pressures and successfully act as carbon-sinks and food-producing sites.

Through the MASU GIF funding, EOS was also able to provide the Sackville Community Garden with a portable solar array and electric lawn trimmer, increasing the site's ease of maintenance while also greatly reducing on-site carbon emissions. The solar trimmer setup was used during the growing season to tackle weed pressures and clear pathways, allowing for both planted crops and visiting community members to better enjoy the space.

This report will share the work done for each of the green spaces mentioned above, as well as the additional outreach and activities that were performed. This report will also describe the coordinating and maintenance work for the Sackville Community Garden.

Project Goals

Our project included: (1) reducing emissions through carbon sequestration of trees and soils in the food forests as well as growing local food which decreases transportation emissions; (2) reducing emissions through the installation of solar energy technology on-site at the Sackville Community Garden for community-use; and (3) increasing community connections though learning about and working in the food forests and green roof together with diverse community volunteers and students.

Green Space Maintenance – Food Forests and Town Hall Green Roof

Collaborative community action is essential for building sustainable, equitable, and healthy communities. Initiatives like community gardens, permaculture food forests, and green roofs promote food security, climate resilience, and sustainable practices. These spaces provide locally grown healthy food, reduce food transportation emissions, and break down barriers to affordable nutrition. Food forests and green roofs support climate adaptation by growing drought-tolerant, native species that sequester carbon, reduce flood risks, prevent soil erosion, rejuvenate soil, and enhance biodiversity. The goal for this project was to foster community participation, shared ownership, and skill-building, while addressing local climate action and sustainability goals.

Maintenance, such as pruning, mulching, and planting, is crucial to maximize these benefits and ensure vegetation thrives. Locally sourced plants reduce transportation emissions and improve project quality. By engaging residents, these efforts strengthen community ties, reduce eco-anxiety, and prepare communities to face climate challenges and uncertainties like the pandemic. Food forests and gardens serve as critical tools for carbon storage and resilience, while creating safe, self-reliant, and prosperous communities.

Sackville Town Hall Green Roof

EOS spent some time caring for the Sackville Town Hall green roof this year, providing maintenance and more plantings within the space. The green roof garden is steadily filling in with perennial plants, but regular weeding of invasive grasses is still needed. EOS provided weeding at the site and planted 8 more hardy and well-suited perennial plants (two of which were native species). EOS visited the roof garden periodically after these plantings to ensure they were growing well and being watered.

Food Forests

EOS first assessed each green space with a local permaculture expert, and determined and prioritized the level of maintenance that each site would receive. Along with tending to the spaces, EOS produced digital maps and basic plant information sheets for four of the food forest sites. With these maps, anyone can know what is in the food forests and how to care for the plants with little to no prior plant knowledge.

Marshview Middle School (MMS)

First, the Marshview Middle School food forest was managed. As one of the newest food forests installed by EOS (2023), it needed early-stage tending to ensure that what was planted continued in their development towards well-established plants. The site received multiple visits for weeding and plant identification (Figure 1a and 1b), and a large order of fresh mulch was brought in to further help maintain the site and help with passive weed suppression (Figure 1c). Many of the plants are growing well and have become well established. The Marshview Middle School food forest was digitally mapped (Figure 4a), and a basic informational sheet on the plants was provided to the school.

Figure 1 – The progression of food forest maintenance at Marshview Middle School: a) site assessment and plant identification, b) weeding and grounds cleanup, c) adding mulch for weed suppression, and d) the MMS food forest after completed maintenance.

Port Elgin Regional School (PERS)

Port Elgin Regional School's food forest was also assessed in collaboration with Principal Becker. EOS had worked on this site the previous year, and plans were already in place through the school for summer maintenance, so EOS focused on providing the school with a digital map of the food forest (Figure 4b), along with a basic informational sheet on the plants.

Sackville Community Garden (SCG)

Next, EOS worked on the Sackville Community Garden's food forest, one of the largest and oldest in the area. Being so well established, the site just needed some basic weeding and trimming maintenance. Much of the space is cared for by volunteers through the SCG, organized through the summer and fall by the Community Garden and Green Space Coordinator. The pathways were weeded and cleared for easier use (Figure 2), and the SCG was also provided with a digital food forest map (Figure 4c) and a basic informational sheet on the plants.

Figure 2 – Two comparison pictures of the SCG food forest before and after maintenance provided by EOS: with a) becoming b) after pruning and mulch, and c) becoming d) after pruning and weeding.

Dorchester Consolidated School (DCS)

Lastly, EOS provided maintenance for the food forest at Dorchester Consolidated School. This food forest needed the most work and had the largest transformation (Figure 3). After a hard winter, the apple trees had been knocked down, and many weeds had taken over the space. Numerous visits were made to weed the space and give the plants some extra care. The apple trees were righted, the supports fixed, and compost mulch provided for extra nutrients. More wood chip mulch was brought in, and EOS spread a thick layer of it over the food forest pathways to help with further weed suppression. This site was also digitally mapped by EOS (Figure 4d), providing a copy to the school along with a basic informational sheet on the plants.

Figure 3 – The progression of maintenance at DCS food forest, where a) shows the original state of the site at the start of summer, b) is the addition of woodchip mulch on top of redefined and sheet-mulched pathways, c) is replanting, and d) shows the food forest after the maintenance was complete.

Digital Maps of Local Food Forests

The following maps were created by EOS Coordinator Brianna MacEachern, with plant identification provided by local experts Estelle Drisdelle and Sarah Evans.

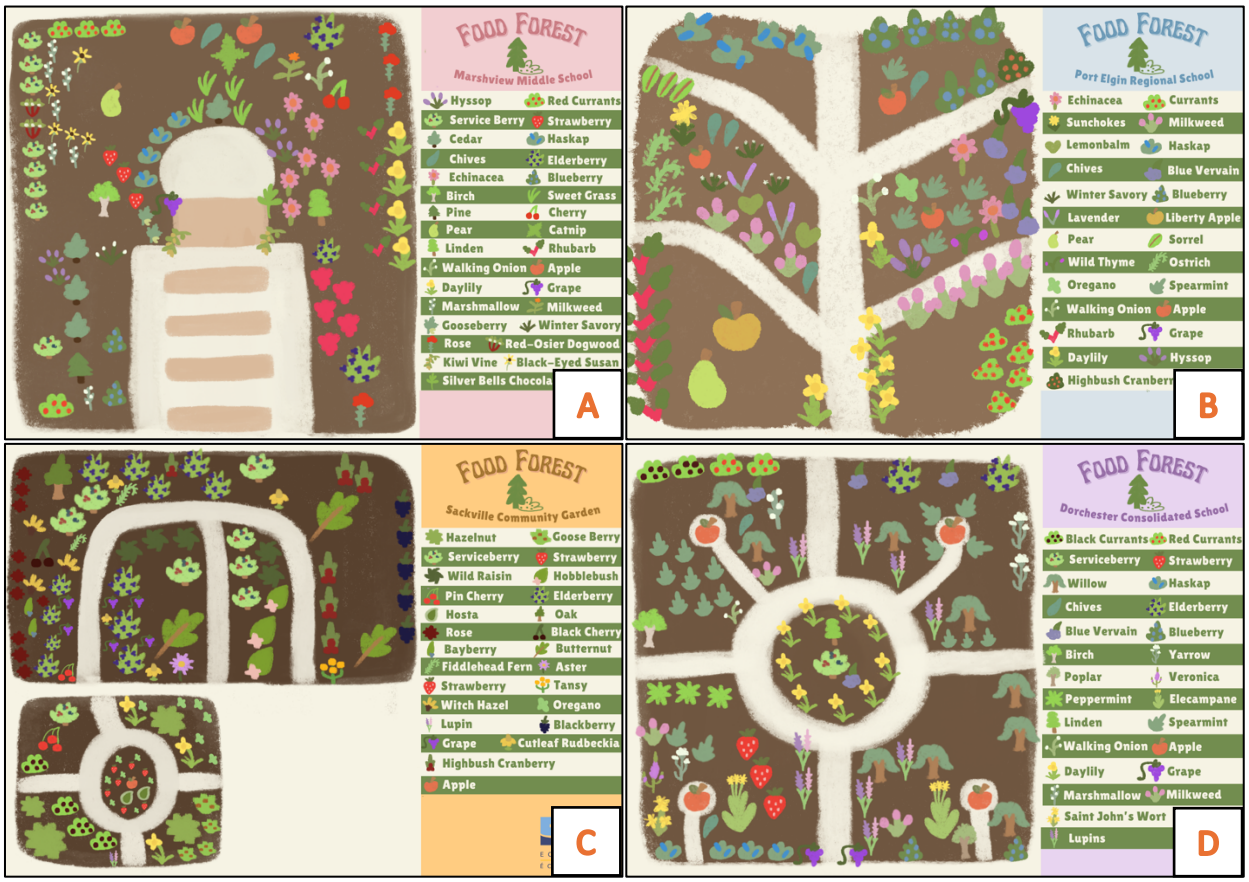

Figure 4 – Food forests maps created by EOS for a) Marshview Middle School, b) Port Elgin Regional School, c) the Sackville Community Garden, and d) Dorchester Consolidated School.

Sackville Community Garden Collaboration

The Sackville Community Garden plays a vital role in boosting local food security, reducing food transportation emissions, and promoting healthy eating. With 42 garden plots, an adjacent food forest with trail access, and its proximity to a municipal stormwater retention pond, it significantly contributes to flood mitigation, conservation, and environmental stewardship. While the space has become a cherished community resource, connections were fragmented during the pandemic, and efforts are underway to restore its role as a shared hub through the addition of a dedicated coordinator. Recent upgrades, such as a stone wood-fired oven and picnic tables, make the garden an inviting space for community gatherings and events. EOS's goal through the GIF was to integrate solar energy for powering tools and activities to further enhance the SCG's climate resilience and reduce its carbon footprint, positioning it as a model of sustainable and innovative community gardening.

Solar Equipment Purchases

EOS worked with the Sackville Community Garden and its volunteer Organizing Committee to determine a solar setup and accompanying equipment that would best suit the SCG's needs. After several discussions and meetings, a portable and durable solar-powered battery and panel generator were purchased, along with an electric trimmer and batteries (Figure 5a). A lockable cabinet and locks were also obtained for added safety and security for the new equipment. The electric trimmer was successfully used to maintain weeds and grasses within the community planting area and along public pathways to the SCG (Figure 5b). The batteries were recharged using the solar generator, and the process was repeated throughout the fall. To ensure usability of the equipment for all SCG members for years to come, "How-To" videos were created by EOS on the operation of the solar generator and panels, and how to use the setup to charge the electric trimmer batteries.

Solar lighting was also installed around the SCG, providing some much-needed light within the storage shed and around the grounds in the evening (Figure 5c). The solar powered light within the shed is motion-activated and turns itself off to further conserve energy (Figure 5d).

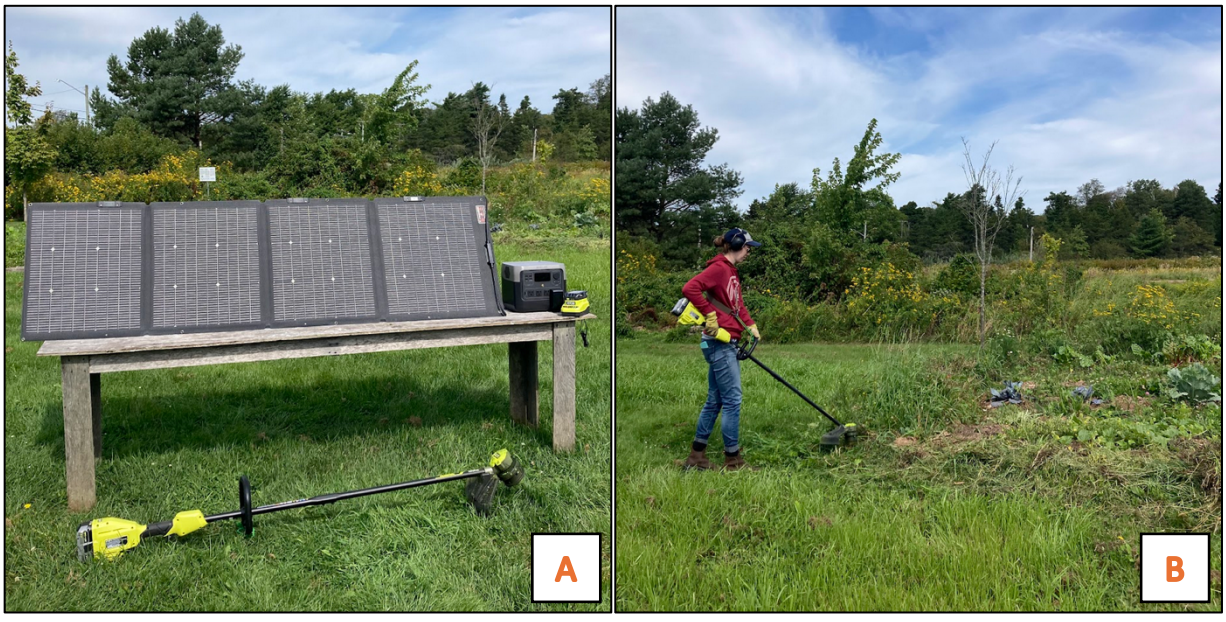

Figure 5 – Components of the Sackville Community Garden solar project, a) the new solar panels and generator purchased for the SCG, along with the electric trimmer and batteries, b) the new electric trimmer being used to maintain the SCG new community growing area, c) outdoor solar lighting on the SCG tool shed turning on for the evening, and d) the solar-powered, motion-sensor indoor light lighting up the SCG tool shed.

SCG Coordinating

EOS' Community Garden and Green Spaces Coordinator, hired with the help of the GIF, performed many duties and tasks to aid the Sackville Community Garden with its operations and outreach. This work included being a point of contact for members and the community through the SCG's email, sending out weekly updates and informational emails to members, managing social media outreach and updates, working with members and volunteers to maintain the grounds, and coordinating and hosting on- and off-site workshops.

Grounds work for the SCG included weeding the new community planting plots, maintaining paths and aggressive weeds by operating the new solar-powered electric trimmer, coordinating with municipal services for mowing, turning compost (Figure 6a), spreading compost and mulch, rock and debris removal, perennial plant pruning, planting, harvesting (Figure 6b/c), pest control, and facilities clean-up (outdoor classroom, composting toilet unit, and storage shed)(Figure 6d). By maintaining the grounds, the SCG can continue to thrive and produce food for community members, as well as be an inviting space for community members to enjoy the outdoors.

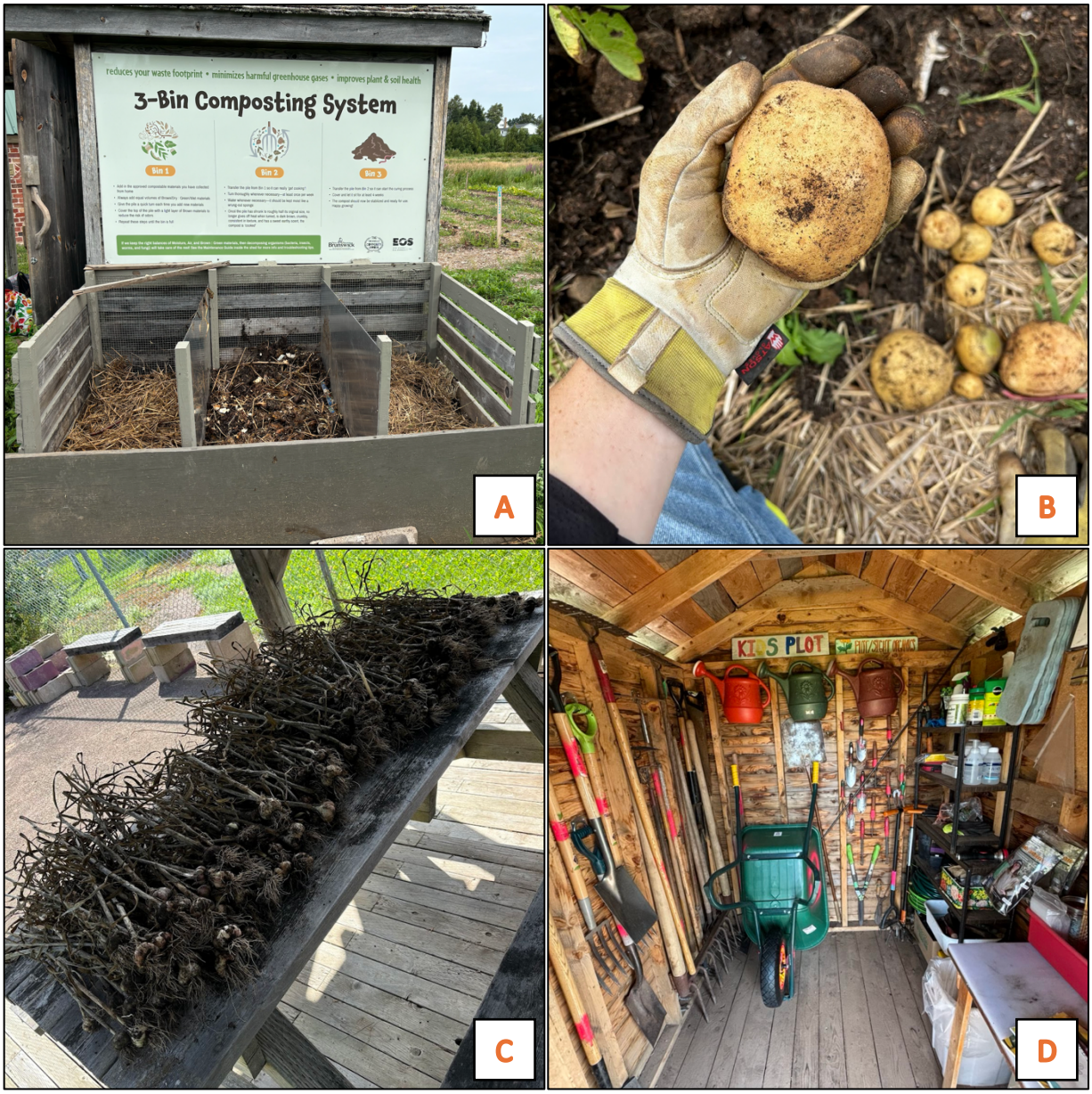

Figure 6 – Work done with the Sackville Community Garden – a) harvesting potatoes from the new community planting area, b) harvesting and preparing fundraiser garlic, c) maintaining compost piles, d) cleaned and organized tool shed improved use and gardener experience.

SCG Outreach, Workshops, and Events

The EOS Community Garden and Green Spaces Coordinator coordinated and hosted many events and workshops in partnership with the SCG. This included:

- **Educational Tours of the SCG**
    - Salem Elementary School Grade 2 Class (June 11, 2024): EOS lead a tour of the Sackville Community Garden and the Community Food Forest for Ms. McNair's Grade 2 class from Salem Elementary. The students were taught the importance of growing food locally and how gardens such as the SCG help their communities. The students also explored the food forest and learned about its many layers and diverse ecosystems, and how food forests are beneficial to the local community and environment.
    - Dr. Corrine Cash Mount Allison Community Planning Class (September 11, 2024): EOS and a SCG member presented to Dr. Corrine Cash's MTA community planning course at the Sackville Community Garden and discussed the coordination and cooperation of multiple organizations that contribute to the Garden's operations. Topics such as why community gardens were important, and how they benefit residences, were also covered.
- **The United Way Day of Caring (June 14, 2024)**
    - EOS worked with volunteers through the United Way's Day of Caring event at the Sackville Community Garden to help maintain and develop plots and the newly installed community growing area. EOS led tours and discussed the importance of the Sackville Community Garden and the adjacent food forest, and new connections were fostered.
- **Art Doodling Workshop (July 21, 2024)**
    - EOS coordinated a Sackville Community Garden workshop with a garden member facilitator that invited the community into a space for artistic doodling of flowers, vegetables, ferns, and more. EOS operated the wood-fired oven so that participants could enjoy hot snacks prepared by SCG members. (Figure 7a)
- **EOS 20th Anniversary Party at the SCG (July 26, 2024)**
    - EOS staff hosted the 20th anniversary celebration for EOS at the Sackville Community Garden. At the event there were general project pamphlets, EOS trivia, and pizza cooked at the wood-fired oven by staff and volunteers from local farm fresh ingredients. In attendance were past staff, current staff, past board members, current board members, EOS members, colleagues, the MLA and her family, along with family and friends in the community. (Figure 7b
- **Wild Bee Workshop (August 17, 2024)**
    - EOS hosted the Mount Allison University bee research team to teach a hands-on workshop about wild bee identification and a lesson about wild bee biology. 7 community members, 2 EOS staff, and 3 bee research team members participated in this 2-hour workshop. Participants captured bees in the garden to examine and identify them before releasing them back out. Participants used hand lenses, microscopes and field guides to learn how to identify bees.
- **SCG Fundraiser Garlic (August 23, 2024)**
    - EOS aided the SCG with their annual garlic fundraiser by harvesting, weighing, bagging, and promoting the sales of this year’s crop. EOS also helped with future crops to come by breaking down the old raised bed that was in a flood-prone area and prepping new beds in the SCG new community growing area. EOS also coordinated the fall planting session of the new garlic bulbs for next year’s harvest.

- **SCG Potluck (September 8, 2024)**
    - EOS coordinated and hosted a potluck lunch at the Sackville Community Garden for its members. Members used items that they had grown in the dishes that they had brought, and there was a great feeling of community and pride as the members discussed the growing year, talked about growing tips and techniques, and shared their amazing recipes.
- **SCG Information and Bake Sale Fundraising Booth at the Sackville Fall Fair (September 21, 2024)**
    - EOS coordinated and hosted an info and bake sale booth for the Sackville Community Garden at the Sackville Fall Fair Family Day event. Working with SCG members, the group shared information and promoted the Garden, all well sold baked goods made and donated by other Community Garden members. (Figure 7c)
- **SCG Open House and Wood-Fired Oven Lessons (September 22, 2024)**
    - EOS coordinated and hosted an Open House event for the Sackville Community Garden, which was promoted for the Sackville Fall Fair events. Community members were invited to tour the grounds, learn about the organization, and have a lesson/try out the wood-fired oven on-site at the SCG. The newly acquired solar panels and battery were also out on display for community members to see and learn about. Baked goods were available for sale, along with free informational pamphlets that were designed and provided by EOS. Many keen community members came by to discuss the SCG and were interested in becoming involved.
- **SCG and Community Canning Workshops**
    - Canning and Preserves Workshop at Open Sky Co-op (September 28, 2024): EOS organized a free beginner's canning workshop for the Sackville Community Garden members so they would have an opportunity to further learn how to use the crops that they grew. The workshop was instructed by local community and Garden member, taking place at Open Sky Cooperative. The feedback from this class was overwhelmingly positive, as participants learned how to hot-water bath can, making both a pickle and a jam from start to finish, and taking their creations home with them. (Figure 7d)
    - Canning and Preserves Workshop with Greater Dorchester Moving Forward Co-op (October 22, 2024): After the overwhelming positive response of the first workshop, EOS organized a second free beginners canning workshop for community members to have an opportunity to further learn how to use and stretch the lifespan of produce. The workshop was instructed by local community member and took place at Greater Dorchester Moving Forward (Station 8). The feedback from this class was once again extremely positive, as participants learned how to hot water bath can, making both a pickle and a jam from start to finish, and taking their creations home with them.
- **Signage and Milkweed Planting with Nature NB (October 9, 2024)**
    - EOS teamed up with Nature NB to put up informational signs about monarch butterflies and milkweed at both the Sackville Community Garden and the Sackville Town Hall Green Roof. A large patch of swamp milkweed was planted at the SCG within their pollinator berms to promote and develop monarch habitat.

Figure 7 – Outreach and events hosted for or at the Sackville Community Garden, a) Art Doodling Workshop at the SCG (July 21, 2024), b) EOS 20th Anniversary Party at the SCG (July 26, 2024), c) SCG Information and Bake Sale Fundraising Booth at the Sackville Fall Fair (September 21, 2024), and d) Canning and Preserves Workshop for SCG members at Open Sky Co-op (September 28, 2024).

Conclusion

The work completed through the GIF project has significantly enhanced community engagement and education while promoting sustainable practices and reducing energy use. By fostering participation in activities such as workshops, tours, and hands-on maintenance, the project brought together diverse groups, from students to community volunteers, to learn about and care for local green spaces. These initiatives not only strengthened connections within the community but also provided valuable skills and knowledge in sustainable gardening, renewable energy use, and food preservation. The workshops and events inspired a sense of ownership and pride, further embedding sustainability into the community.

A focus on reducing GHG emissions was central to this project, as seen in the installation of solar panels and the introduction of battery-powered tools at the Sackville Community Garden. These measures reduced emissions and set a precedent for integrating clean energy solutions into community projects. Solar lighting and portable solar setups increased accessibility and functionality while showcasing renewable energy's potential to meet practical needs. Additionally, efforts to promote local food production through community gardens and food forests reduced the carbon footprint associated with food transportation while enhancing food security in Tantramar.

This project demonstrates the power of collaboration and innovative thinking in addressing climate action goals. By prioritizing education, sustainability, and emissions reduction, it not only benefited the environment but also empowered the community to take ownership of its role in building a resilient, self-reliant, and healthy future. The outcomes serve as an inspiring model for other communities aiming to integrate sustainability into their daily lives.