DIGGING IN

NOVA SCOTIA HORTICULTURE FOR HEALTH NETWORK

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nshhortnetwork@gmail.com

The Nova Scotia Horticulture for Health Network is a coalition of people interested in supporting horticulture for health initiatives through resource-sharing, exchange of practices/knowledge, and networking.





Raised Garden Beds

Text by Lana Bos, MSc Photos by L. Fleming & L. Bos

Interest in gardening has exploded during COVID-19, with individuals and facilities exploring options for how best to grow ornamental and edible plants. Raised beds have great appeal for ease of gardening, but also because they offer some solutions for gardening challenges related to soil, pests and site locations.

Benefits of raised beds are numerous. The ergonomics of in-ground

gardening is challenging for many people. The alternative of raised beds provide greater adaptation to specific physical challenges of bending, balancing, standing, and twisting. The ability to customize the height (and width) of the growing space to suit the gardener, along with greater control of soil quality, composition and drainage can be significant. Raised beds can be placed in locations like parking lots and rocky sites, maximizing inhospitable gardening sites. Longer growing seasons are also cited – raised beds warm up faster and cool down slower. And many can be converted into cold frames.

Whatever the reason for using raised beds, the first consideration is selecting the optimal height and size of the bed, based on the intended gardener. Raised beds can be built in all shapes and sizes and a

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Photo top right: Gardenia Gardens

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variety of kits are available for all tastes, needs and preferences. These include fabric pop-up kits, galvanized containers, multi-level plastic beds, deer-proof enclosed raised beds, self-contained raised bed mini-garden complete with fence and lock, and elevated cedar planters with greenhouse covers (Constable, n.d.).

Safety should not be overlooked, particularly if raised beds will be used at facilities or public spaces.

A few factors to consider when selecting and building raised beds:

- What is the best height for the gardener? Will gardening be done from a standing or sitting position? Rothert (1994) advises 30" for gardeners wishing to stand without strain, 24" for seated gardening including those in wheelchairs, and 18" for children or those perching on bed edges.
- Bed stability is essential particularly if gardeners will be sitting on the edge of the bed; the
 construction needs to be sturdy enough to support their weight.
- Raised beds built with a flat edge for sitting has in the past been popular, however this can be challenging for many because it requires twisting the torso. The ledges can be used for balance, with one hand working while the other provides stability.



Newly
constructed
raised beds at the
Tatamagouche
Community
Centre, NS were
designed and
built for use by
elder populations.

- Width of beds should be two arms lengths (approx. 4 feet) so that the bed can be worked from either side, without stretching or reaching too far.
- Length of raised beds is variable, and should be based on the available outdoor space, number of gardeners expected to use the bed, and desired size of harvest.
- Preferred materials include untreated or cedar lumber (use screws instead of nails, and bolt pieces together); composite, brick or masonry materials; oak whiskey barrel; or pre-fabricated kits.
- If lumber is used, (4x4s for example), sand or round edges and be vigilant about maintenance, watching for splintering and deterioration. Expect to remake lumber beds every few years.
- To provide wheelchair access, raised beds can be bevelled inwards, and/or built with knee clearance.
- Keep in mind accessibility of garden paths (crushed gravel is recommended), wheelchair turn around space, access to water sources, and convenient drop-off location.
- Select accessible, ergonomic tools for easy maintenance.

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- Avoid poisonous or toxic plants.
- Consider including picnic benches in the garden area for rest breaks and flat surfaces for planting materials and harvesting produce....and tasting the freshly grown vegetables!



Newly constructed raised beds at the Glenwood Drive Community Garden in Truro, NS. These are built with 2x6's as the primary focus is vegetable production.

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Lana Bos is a Horticulturist and a Curriculum Development Specialist with Dalhousie University, Faculty of Agriculture. She spent 12 years teaching the Horticulture Skills Training Program at Nova Institution for Women and has worked on a number of therapeutic horticulture (TH) initiatives, including building raised gardens and teaching in the community. She is an active gardener, both in her own raised beds and at a community garden near her home. She has a passion for vegetable production, rejoices in the therapeutic aspects of gardening and connection to nature and is committed in contributing to food security in both her personal and professional life.



Raised beds were built and planted on a Day of Caring at the Colchester Community Workshop in Truro, NS.

Planting Tips for Raised Beds

Text & photos by Lana Bos, MSc.

Planning your garden is step number one. Decide if the nature of the garden will be organic or not. Think about the types of plants and quantity of food you want to grow. Align this with the time that will be required to maintain and harvest the produce.

Tips for planting in raised beds:

- Consider doing a site assessment for optimal location of the garden. Though the issue is not soil quality because you will be bringing soil into the raised bed, positioning the bed in an area that gets at least 6-8 hours of sun a day will produce the best growth.
- Water source should be handy, with easy access and manageability of hose and water wand.
- Raised beds can be custom built to suit the location; easy access from all sides is preferable.
- Recommended height of raised beds is 30" tall for gardening from a standing position or gardening stool. Refer to <u>Raised Beds</u> article pp.1-3.
- Trellis or other structures in the bed can support climbing plants and tomatoes.
- Purchase top quality topsoil – you only want to purchase and move it once!
- Amend the soil as you would with in-ground beds, using compost or composted manure.





This home garden designed with several raised beds, planned for a season of fresh produce plus amounts needed for preserving and pickling for the winter.

GARDEN DESIGN TIPS

Once a site assessment and location for the raised beds have been determined, the next step is to create the planting design. Consider the purpose of the garden. Will all of the produce be eaten immediately or is there interest in freezing and preserving some vegetables and herbs? What are the food preferences of the gardener and her family? Will the homegrown produce supplement store bought produce or is it the mainstay of the family's diet? Will any produce be grown and donated? Each of these questions will factor into the size of the garden and what the home grower is able to manage and consume.



A common mistake of many gardeners is being over-zealousness in the spring, planting alot of everything. Though one of the delights of gardening is savoring the variety and splendor of plants, try to stick to a plan and budget. Planting more than can be maintained can result in poor quality produce (when no thinning has occurred) and spoilage. Food gardeners should be prepared to undertake daily maintenance of watering, inspecting for pests or other problems, and harvesting. Interplanting is a good way to manage quantity and variety of vegetables and

herbs (top photo). Square foot gardening is another approach to garden design where intensive but planned plantings will produce the desired amount of food (photo below).

Horticulture courses are available online - Organic Vegetable Gardener Course from Dalhousie University.

https://registeratcontinuingeducation.dal.ca/search/publicCourseSearchDetails.do?method=load&courseId=2532284&selectedProgramAreaId=17381&selectedProgramStreamId=17411



Guided Imagery: A Therapeutic Technique

By Lesley Fleming, HTR Photos by V. Pankevich. Unsplash

Visualized images can evoke sensory, emotional and physiological responses. When used as a therapeutic technique, these mind-body interventions can improve health and well-being (Rossman, 2018; Bressler, 2010). Referred to as guided imagery, guided affective imagery, interactive guided imagery and katathy-imaginative psychotherapy, health professionals across disciplines from oncologists, psychologists, counselors, trauma specialists, teachers and horticultural therapists use guided imagery in their practices (Krau, 2020).

Guided imagery has been used for many centuries, with significant advancements emerging in the field in the 1970's (Duarte et al., 2014). On-going interest in this technique continues because it offers effective, safe, economical, and nonpharmacologic intervention. Its applications are used with diverse and wide-ranging health challenges including cancer treatment, chronic pain, anxiety, depression, stress, fatigue, mood disturbance, pre-surgery preparation, improvement for elders, tobacco cessation and palliative care (Pile et al., 2021). Guided imagery can be delivered in a variety of ways - as in person counselling, in group settings, in tele-health format, and as self-care (Zehetmair et al., 2020). Adverse effects are limited; caution is advised when using with patients who have experienced past trauma, abuse or mental illness (psychosis), and who have difficulty differentiating between subjective experience and objective reality (Gubili et al., 2021).





The physiological impacts of guided imagery on major systems within the human body include respiration, heart rate, immune responsiveness, sexual function and gastrointestinal mobility (Prabu & Subhash, 2015). "Imagery is known to be a powerful means of stimulating physiological processes and is increasingly used with standard psychological therapies" (Duarte et al., 2014).

Clinical trial research on guided imagery is limited (Gubili et al., 2021). Neurophysiological research suggests that it can play a significant role in memory, learning, action and information processing, which result in physiological responses (Gubili et al., 2021). Evidence-based research continues to tease out the mechanisms underlying the effects of guided imagery and its most effective applications, for example, "images [that] evoke calm and joy producing a relaxation response" (Gubili et al., 2021). Guided imagery used as a biobehavioral intervention for common health challenges experienced by the general population including fatigue, food cravings and stress, is becoming more widespread (Menzies et al., 2011; Giacobbi et al., 2018). And compassion-focused imagery, a more recent

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application used to generate feelings of safeness, involves techniques of emotion-regulation, visualization, and reduction of negative affect (Naismith et al., 2019; Duarte et al., 2015).

Analogue depictive style used within an embodied cognitive framework that integrates perception, cognition and action as a means to elicit change is the predominant methodology, with <u>prepared scripts</u>, another widely-used methodology of guided imagery (Palmiero et al., 2019).

The use of plant imagery including visual, olfactory, and gustatory sensations like the smell of lilacs, walking on wet grass in bare feet, stability of deep tree roots used as a grounding technique resonate with people and their life experiences as do guided imagery of moments in nature like hearing the sounds of waves and gazing at star filled skies (Morgan, 2016; C. Wilson, personal communication, 2021). The Healing Waterfall: 100 Guided Imagery Scripts for Counselors, Healers & Clergy" by psychologist Max Highstein (2017) addresses issues of calmness, healing, emotional well-being, and meditation and is intended as a tool for use by health professionals.

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Lesley Fleming, HTR has used guided imagery with a variety of populations in her therapeutic horticulture practice.

Health Practitioners' Tips for Guided Imagery

Compiled by Lesley Fleming, HTR Photo by M. Krahn. Unsplash

Guided imagery, the use of cues, primarily verbal, to evoke positive mental images and physiological change, is an intervention used by health practitioners. They share tips on using guided imagery for people-plant programming:

 Know your clients, assessing their receptiveness to this type of intervention; people living with dementia for example, may find it challenging to remember past images due to cognitive deficits.

Lesley Fleming, horticultural therapist

 Use of printed images (forests or lavender), use of fragrant pine needles, lavender sachets or cedar shavings can aid in guided imagery, along with deep breaths and participants who are relaxed.

Susan Morgan, horticulturist, therapeutic horticulture practitioner

 Make the guided imagery narrative as detailed as possible in terms of using the five senses.

Dr. Gwen Dutrizac, clinical psychologist

 Use language and imagery that is meaningful and important to the client which indicates compassion and attunement. For example, if the client has spoken of a stream they played in as a child, evoke this imagery. If the



client has favourite flowers with scents associated with positive memories and emotions, make space for this, opposed to choosing the flower or plant for them.

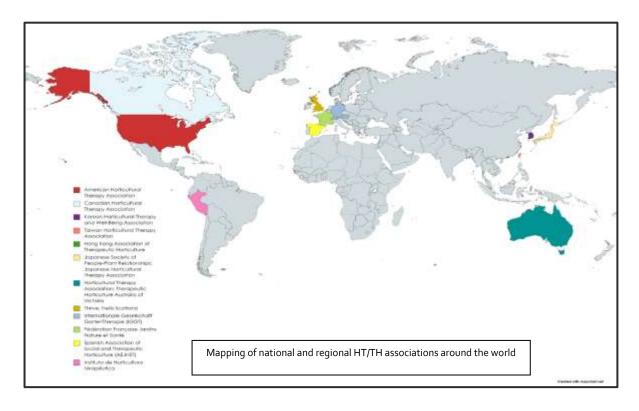
Christina Wilson, social worker

For grounding techniques speak of outreaching branches and deep roots that create a sense
of stability and support. Create a personalized script allowing the client to choose their tree
as opposed to a set, rigid script. This can be more meaningful and engaging.
Christina Wilson, social worker

Horticultural Therapy Worldwide

By Siang Yu Tham, MA Graphics by SY. Tham, MapChart, & National Parks Board Singapore Original publication in 2021 *Cultivate* 1(1): 9-11. Reprint permission granted by Siang Yu Tham.

The use of nature and plants as a form of therapy is practiced all around the world. The term "hortotherapy" was first used by Richardson Wright in 1945 while the term "horticultural therapy" was introduced by Ruth Mosher in 1948 (Olszowy, 1978). Horticultural therapy as a profession is said to have begun following the end of World War II, due to a rise in occupational therapy programs in the United States (Relf, 2006; Shoemaker & Diehl, 2012). Subsequently, the profession has gained interest in other countries and regions including but not limited to Canada, the United Kingdom, Japan, South Korea, Israel, China, Hong Kong, India, Singapore, Australia, Peru, Spain and France.



With a growing interest in horticultural therapy (HT), its development varies across countries and regions (Reed, 2015). Some have established associations to provide professional registration, accreditation, training and networking opportunities. The United States and Canada offer professional registration and training in horticultural therapy through the American Horticultural Therapy Association and the Canadian Horticultural Therapy Association respectively (Haller et al., 2019). The Hong Kong Association of Therapeutic Horticulture, which was established in 2008, provides HT professional certification, with its first registered horticultural therapist accredited in 2011. The Taiwan Horticultural Therapy Association was founded in 2013 and provides courses and accreditation for horticultural therapists (THTA, 2021). Other associations focus on training and knowledge sharing - the Horticultural Therapy Association of Victoria was established in 1984; it offers opportunities for

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training and networking for horticultural therapists and other interested people in Australia. Therapeutic Horticulture Australia (2021) represents therapeutic horticulture in Australia and offers support "through networks, training, education and research." The Asociación Española de Horticultura y Jardinería Social y Terapéutica (AEJHST) connects Spanish-speaking professionals and promotes training and research in horticultural therapy, while the Instituto de Horticultura Terapéutica in Peru offers a certificate program in horticultural therapy for Latin American professionals (Alcalde, 2020).

Organizations such as the <u>International People Plant Council</u> (IPPC) and regional HT groups within the United States and Canada do not provide professional registration but serve as platforms for sharing knowledge and promoting research internationally.

Horticultural therapy and therapeutic horticulture is also practiced in several countries such as India, China, the United Kingdom and Singapore, where no national associations have been established (Sia et al., 2018; Zhou & Relf, 1991). The Horticultural Therapy Healing Centre in India focuses on training professionals in horticultural therapy and serving children with special needs (Bonazzi, 2020). United Kingdom-based organizations Thrive and Trellis Scotland practice social and therapeutic horticulture, which they define as "the process of using plants and gardens to improve physical and mental health, as well as communication and thinking skills" (Thrive, n.d.). The National Parks Board Singapore offers therapeutic horticulture programs which are "suitable for elderly groups, persons with dementia and other special needs" (National Parks Board, 2021).



Making of scent bags in a therapeutic horticulture session in year 2017. Photo: The National Parks Board, Singapore.

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Professional associations and networks can create better alignment of horticultural therapy as a profession within the country/region as well as globally. However, the accessibility of information today has equally enabled practitioners to enhance and share their knowledge even without the presence of professional associations in their countries. Despite the different stages of development of horticultural therapy as a profession in various countries, practitioners all have a common goal of serving their clients. Upcoming articles in this Horticultural Therapy Worldwide series will feature some of the efforts of horticultural therapy practitioners around the globe.

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Siang Yu Tham began her foray into horticulture when she worked on organic farms in France in 2013. Siang Yu later returned to Singapore as a senior farm manager and head of education in an urban agriculture and foodscaping company. She is now the founder of By Wind and Wave, a company which conducts nature-based programs. She is a certified permaculture designer and received her Undergraduate Certificate in Horticultural Therapy from the University of Florida, and she is currently Program Manager of Therapeutic Horticulture at Wilmot Botanical Gardens situated in the university.

The Nova Scotia Horticulture for Health Network Inspires the Florida Network

By Lesley Fleming, HTR & Bree Stark, BS Graphics by Florida Horticulture for Health Network



The Horticulture for Health Framework

Activities are categorized into five subsets:

- "health services that use horticulture as an integral part within a therapeutic modality framework;
- groups or movements using horticulture as the catalyst for social interactions;
- landscapes for health: specifically designed landscapes (Sachs, 2008);
 - food, nutrition, and food security;
 - horticultural practices" (Fleming, 20xx).

The Florida Horticulture for Health Network was established in 2021, modeled after the Nova Scotia network. Both groups recognized the extraordinary activities and programs using horticulture in innovative and health improving ways, and both networks sought to highlight and share these examples. The networks became the connector, to link people and resources with the shared mission of providing a platform for the intersection of horticulture and health.

Horticulture for health includes all nature of activity where human health and wellbeing are promoted with horticulture being a significant element. Both networks include: therapeutic horticulture, horticultural therapy and allied health professionals using horticulture, gardens and nature interventions; landscapes for health; community and school gardens; plant-based food, nutrition and food action initiatives; and horticultural practices positively impacting health.

The Florida Horticulture for Health Network (FLHHN) supports the University of Florida's <u>Certificate in Horticultural Therapy</u>, which delivers its courses virtually, and which is accredited by the <u>American Horticultural Therapy Association</u> for professional registration. The FLHHN offers open access to anyone interested in horticulture for health, and not just in Florida. People from Canada, Japan, China, and Denmark have subscribed to FLHHN.

This accessibility and inclusion is operationalized by easy access to the <u>FLHHN</u> website. As a platform for knowledge, educational offerings and resources, the website offers a wealth of information across the diverse and expansive horticulture for health domain.

Their quarterly epublication <u>Cultivate</u> examines issues and topics such as (but not limited to) reflexology paths, populations with sensory challenges with considerations for people-plant programming, and sensory engaging plants.

The Florida network's free <u>FLHHN webinars</u> address a wide range of topics and have included adaptive gardening, program examples, people-plant activities, allied health interest between horticultural therapy and laughter therapy. Many of these webinars are presented live, with availability on the network's <u>youtube channel</u>. The upcoming webinar <u>Addressing Mental Health Challenges Using Horticulture-focused Programs</u> is a collaboration between the two networks with presenters Hillary Lindsay from Nova Scotia and Morgan Whitaker Smith from Florida.

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The Resource Hub is an important component of the FLHHN webpage, with access to extensive research, program examples and related organizations. The Resource Hub uses eight primary categories, utilizing Fleming's horticulture for health framework (20xx). These include benefits of gardening, horticulture as a catalyst for social interactions, landscapes for health, that is, designed landscapes like enabling gardens, restorative gardens etc., food action initiatives, horticulture practices impacting health, and different populations that benefit from horticulture-focused programs including seniors, corrections, veterans, youth, refugees and migrants among others. Contributions and review by professionals from multiple disciplines have made the Resource Hub relevant and current. The Resource Hub serves as a starting point for further investigations by students, professionals, and people interested in learning or researching topics related to horticulture's impacts on health.

Several common elements tie the Nova Scotia and the Florida Horticulture for Health Networks together. In addition to common vision statements and strategic goals of supporting, sharing, and expanding connections and resources that promote all aspects of horticulture for health (excluding psychotropic drugs and cannabis,) both groups acknowledge that horticulture is impactful in a multitude of ways that foster health and wellbeing. Many individuals and organizations may not be aware of the connections, since oftentimes these initiatives are discipline specific, without awareness of, or interaction with related activities in other sectors. For example, plant-based businesses are contributing to improved awareness and product availability (Maritime Mushrooms, Aerofarms vertical farming, Imperfect Foods, Le Champignon de Bruxelles underground mushroom production). Nutritionists promoting food literacy use school gardens, community gardens, and, increasingly, podcasts (Nourish Nova Scotia's school gardens, Fresh Rx, Fresh Produce podcasts from the Institute of Food Technologists.) Food action initiatives with replicable models can be found in Florida, Nova Scotia and elsewhere with examples like Common Roots BiHi NS, Cleveland Crops culinary training for people with disabilities, Fleet Farming FL. social enterprise transforming lawns into edible gardens and micro-farms, and Grow2Heal Hospital Garden FL. vegetable farm affiliated with Baptist Health.

Leadership for both horticulture for health networks has been graced with practitioners recognized in their respective fields. Frequent collaborations amongst contributors from several disciplines - Lana Bos (horticulture), Kathy Carroll (education), Siang Yu Tham (horticultural therapy), Susan Morgan (horticulture) and Christina Wilson (social work) – has broadened perspectives on what the horticulture for health field accomplishes in multiple communities and disciplines.

Perhaps it is this cross-cultivation that lends the Florida and the Nova Scotia Horticulture for Health Networks strength. The impetus for both has been sharing knowledge; the NS network initiated in 2011, the FL network established in 2021. The synergies and connections between the two makes pathways for knowledge sharing easy, effective and interesting. One metric for success is replication of good ideas.

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Lesley Fleming, HTR began the NSHHN in 2011, seeking to share resources less accessible in NS than in the U.S. communities where she worked. In 2021, she, in conjunction with Leah Diehl, Bree Stark, Siang Yu Tham, Susan Morgan, Jacqueline Swank, Jessica Sullivan and others, established the FLHHN based on the NS network. Bree Stark, BS oversees the FLHHN website, with a degree in Agricultural Education and Communication from the University of Florida integrating her HT experience into the digital content.

Lunenburg Community Garden

By Lesley Fleming, HTR Photos by Shaye Graham



"The Lunenburg Community Garden is a community project that seeks to create an inclusive and sustainable green space in the heart of Lunenburg, where all members of our community are welcome to gather, share and celebrate the simple act of growing food". The community garden is located on top of Gallows Hill, on the historic grounds of the <u>Lunenburg Academy National Historic Site</u>, which is the only remaining 19th century Academy building surviving in Nova Scotia.

The community garden was established in 2014. There are approximately 20 leased beds, a few community beds, and compost facilities. The Lunenburg Library and the town of Lunenburg support the garden with in-kind and other resources. In 2021 <u>Coastal Action</u> partnered with the community garden, providing part-time garden coordinator Shaye Graham, who undertook outreach activities with local youth, organization of garden-themed workshops and garden maintenance.

Though the 2021 garden season was impacted by COVID-19, great things happened none the less. Fall Harvest Share & Seed Swap, herbalist student Gaelle McNeil's demonstration on native plants and healing properties of common backyard plants, a workshop on maximizing small spaces in the garden using natural materials and new structure ideas, along with expanded food access with the implementation of a food forest in conjunction with Coastal Action Earth Quest were undertaken by the garden.

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Like many community gardens, Lunenburg community garden members are concerned about food security and food access. Growing and sharing food from the garden, and hosting communal meals were planned for 2021, with some of these delayed until the next growing season. Inclement weather, a late start, vandalism and COVID could not deter the gardeners in 2021. Looking forward to 2022 and Weedy Wednesday get-togethers, the new growing season will shift into high gear shortly.

Lesley Fleming, HTR visited the Lunenburg Community Garden in 2019, inspired by the location, the raised beds with netting, and the produce being grown in this setting by dedicated gardeners. She was further inspired talking with Shaye Graham, Environmental Education Sr. Field Technician from Coastal Action and Lunenburg Community Garden Coordinator who provided facts and photos for this article.









Resources Spring 2022



Asian Giant Hornet. Photo: invasive.org

Insect Identification website provides a window into the fragile ecosystem, with beautiful color photos organized by insect type, color & special topics like flying, biting & helpful insects. https://www.insectidentification.org/

Insect Images from the Entomological Society of America is a database intended to be used for educational purposes & which includes photos, identification, taxonomy & descriptions. https://www.insectimages.org/

Invasive and Exotic Species of North America website includes any species (plants, insects, pathogens) "capable of promoting that species, that is not native to that ecosystem; and whose introduction does or is likely to cause economic or environmental harm or harm to human health".

https://www.invasive.org/

Insect Art article in the *Smithsonian Magazine* examines how insects have inspired many forms of art throughout history from cricket etchings to beetle shawls. https://www.smithsonianmag.com/arts-culture/the-creepy-crawling-history-insect-art-180979288/

Nova Scotia Horticulture for Health Network

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Summer 2022 Issue of Digging In: Herbal Gift Garden, Staff Wellness Initiatives & the Role of Plants

Publisher & Editor in Chief Lesley Fleming, HTR
Contributors

Lana Bos, Susan Morgan, Gwen Dutrizac, Christina Wilson, Kathy Carroll,
Siang Yu Tham, Mapchart, National Parks Board Singapore,
Bree Stark, Florida Horticulture for Health Network, *Cultivate*, Shaye Graham,
V. Pankevich, M. Krahn, Universal Eye, Unsplash, Invasive.org, Gardenia Gardens

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