

ECOLOGY ACTION'S GARDEN COMPANION

GROW BIOINTENSIVE News from Around the World

Feed a Family Initiative in Canada

By James Christie-Fougere,
Co-Director, The Kootenay Society for Sustainable Living

Photo: Frank Roberts



EA's Mini-Farming Program and Living Legacy

Introduction—

Even though we are just beginning our 48th year, it is important to reflect, plan and create initiatives. Ecology Action's GROW BIOINTENSIVE (GB) Closed-Loop Mini-Farming Program has a legacy of demonstration, education and research of biologically intensive food- and soil-growing as one of the oldest such initiatives on and for the Earth. In the upcoming decade, we will expand on this foundation.

The Jeavons Center Mini-Farm (TJC)—

Due to financial restraints stemming from the 2008 recession, TJC Mini-Farm in Willits, CA, had to hibernate under a blanket of wooly pod vetch compost and cover crop during 2018. This legume is important as it has the capacity to fix up to 0.63 pound of nitrogen per 100 square feet—in comparison with the

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Photos by James Christie-Fougere

The Feed a Family Mini-Farm is learning to grow food at 3,600 feet elevation.

James and Sharon were EA interns in 2016. In the spring of 2018 they founded the Kootenay Society for Sustainable Living and established a GROW BIOINTENSIVE Research and Demonstration Mini-Farm in the mountains of the East Kootenay region in British Columbia, Canada. Their young son, Lincoln, is a part of their daily life on the Mini-Farm. Sharon and James are currently working towards their GROW BIOINTENSIVE Basic-Level Teacher Certification. Here is a report of their activities.

Once we returned home from our internship, we spent the first year establishing a 4,500-square-foot garden, and running variety trials, in order to determine which crops were suitable for our climate. We hosted weekly workshops and tours in hopes of empowering the people in our community to start growing their own food. We were very encouraged by the number of people who came to see and learn, and by the enthusiasm with which people thanked us for our work. We believe building a strong and resilient community is the key to local food security, and the people we met agreed we all need to work together.

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Feed a Family

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At roughly 3,600 feet elevation we have a 4-month growing season. We found there are no frost-free growing months and experienced dim smoke-filled skies due to area wildfires, for the entire month of August. Even with these challenges our gardens thrived using the GB method! The research here will be ongoing as we work towards acclimatizing crops to our cold environment and minimizing the resources required to produce a complete diet for the entire year.

While we processed our harvested grain this fall, we talked about ways we could continue our research while also supporting our community with healthy food. We came up with the Feed a Family Initiative, an undertaking that will not only create funding for our project but also provide food for families in need in our community.



Lincoln looks on as Sharon harvests grain.

Here's an overview of the initiative:

- Participants of the project sponsor a bed for a predetermined dollar amount (\$500).
- The sponsorship goes towards all the costs of growing and maintaining crops in a 100-sq-ft GB bed and also supports the research and development of crops and the demonstration of GB as part of our research and demonstration Mini-Farm.
- For the entire growing season all food grown in each bed will go either to a specific family in our community or to the food bank for distribution.
- Families will receive weekly and bi-weekly food from crops like kale and lettuce, and when harvested, calorie-dense

food, like potatoes and grains such as barley and wheat.

- To maintain sustainability and follow GB principles, the 10 sponsored beds will be shared among all families, with each receiving one tenth of the harvest. In this way we will grow six beds of calorie and compost crops, such as barley, wheat and quinoa, three beds of calorie-efficient crops such as potatoes, garlic and leeks, and one bed of nutrient-dense foods such as kale, peas and carrots.



Lincoln enjoying the Mini-Farm.

With this initiative, supporters of our project can help fund ongoing research and development, help us continue to offer free workshops and tours and assist us as more farmers are trained. At the same time they will see their donation turn into healthy organic food that will feed a family in need in our community.

We feel especially fortunate that Lincoln has the opportunity to spend so much time in the gardens. Even though he's not yet two years old, he's already trying to help water the beds, pull weeds and plant seedlings, and we hope that he'll grow up with an appreciation for biodiversity and things that grow. Ultimately our work is aimed at benefiting the next generation and ensuring Lincoln will inherit a world of plenty, and be inspired to protect our natural resources.

Once established our hope is that the Feed a Family Initiative will become a blueprint and a foundation for more community-supported-agriculture (CSA), a system that doesn't rely on a single large farm to produce food for many, but rather relies on many small gardens sharing ***Continued on page 4***

Living Legacy

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approximately 0.21-pound potential of other legumes.

2019 will see the beginning of the Mini-Farm's resurrection of its 110, 100-square-foot growing beds. This is made possible by the very thoughtful contributions of the Ceres Trust, the Warsh Mott Legacy, the Edna Wardlaw Trust, Dr Bronner's Soapmaker and Ecology Action Members! Once before, when we had to let half of the Mini-Farm rest fallow, the soil, built up from the initial poor-for-grazing status (see five-part article on Biointensive in *Journal of Sustainable Agriculture*, 2001, second issue), was fertile enough to produce well the next year.



Photos: EA staff

The Jeavons Center Mini-Farm.

After a year of rest, once again TJC will have staff and GB interns living on-site and working the Mini-Farm. Misha Zaied from Willits will be overseeing the process as Mini-Farm Manager, under the supervision of John Jeavons. Zaied anticipates staying at TJC Mini-Farm for the long term. A Mini-Farm Assistant Manager is actively being sought. In addition, this year there will be two 8-Month Interns, one from Italy and one from Latin America, in the process of being selected. In September 2019, Ike Enahoro, the son of Agaja Enahoro, a former lead Alan Chadwick apprentice at his Virginia site, will be joining us as a 3-Year Apprentice. After his apprenticeship, Ike will become a Farmer/Teacher staff person for which he has given an additional 10-year commitment.

Each staff person, intern and apprentice will design and grow an experimental 10-Bed Unit (1,000 sq ft of planted growing area—1,200 sq ft including paths). Each of these units has the potential of growing a complete balanced diet for one person annually, assuming intermediate GB yields,

a reasonable level of skill and a well-choreographed design. The unit also has the potential to grow all the compost materials for itself from the well-chosen diet crops and interplanted legumes.

Also to be initiated will be the design and growing-out of the first 10 running feet of a living fence to eventually surround the Mini-Farm over the following five years. The fence will be based on the approaches used in the excellent book, *Hedgerow*. (Read the EA review at <https://johnjeavons.org/2018/06/19/hedgerows/>.) The fence involved has the capacity to be a protective habitat for birds and beneficial insects, provide berries and nuts, and keep deer from entering the cultivated area. It can also provide building materials for wooden farm implements and home furniture, including bow rakes, scythe handles, pitchforks, bowls and spoons. The design will be created by David Troxell, forester and husband of Ecology Action's Administrative Assistant, Laurie Birch.



The Victory Gardens for Peace Mini-Farm.

Victory Gardens for Peace Mini-Farm (VGfP)—VGfP is continuing its strong demonstration, education and research program in collaboration with Ecology Action and the Stanford Inn. The Mini-Farm is under the supervision of Matt Drewno, Manager, and Kimberley Fisher, Assistant Manager. They have the help of 1-Year Apprentice Brooke Eichenlaub and 1-Year Intern Gabriella Cobb, both of whom will become Farmer/Teacher/Trainer staff in May. Three 8-Month Interns, one each from Puerto Rico, Nicaragua and Latin America, will join the team in April.

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Feed a Family

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and supporting each other. CSAs can work together to feed great numbers of people and raise money to grow and expand. We'd like to lead by example and create the framework needed for more people to grow food for each other. With the right crops and the valuable data we collect we can increase food security, together!

If we are successful, we would then share this blueprint with our colleagues, such as 2016 Intern, Sammy Kangethe in Kenya, and help establish similar projects in their home countries. The Feed a Family Initiative will help raise funds for their research and also enable them to feed their community. As GROW BIOINTENSIVE Teachers we can continue to educate and empower the people in our communities, and feed them at the same time!

To learn more about the Kootenay Society for Sustainable Living and to support our work, please visit our website www.growsustainability.org or contact us at contact@growsustainability.org.

Living Legacy

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Also, one each 1-Year Apprentice and 6-Month Intern are in the process of being selected. At least one experimental 10-Bed Unit will be grown in the 200, 100-square-foot beds for which the VGfP is responsible, and a large amount of food will be produced for the Stanford Inn's gourmet restaurant, The Ravens. In addition, Drewno will complete an important EA/VGfP Self-Teaching Mini-Series Booklet 38, *Achieving More with Less: Experiments in Growing a Complete Diet in 1,000 Square Feet*. This is about the background and details needed for understanding and designing a 10-Bed Unit.

Educational Localization and Outreach—A World Sowing and Harvest—

Numerous initiatives are being taken to share Ecology Action's and John's almost half-century of experience and skills locally and globally.

- Ecology Action has joined the 50,000-member Amer-

ican Community Gardening Association, <https://communitygarden.org/>.

- John gave a series of presentations at Evergreen College in Olympia, WA, on February 8-10, 2019. On the 8th, a day of class and demonstrations was held for 80+ students and related faculty from several courses. On the 9th, an evening presentation for the general public discussing the local and world relevance of GROW BIOINTENSIVE took place. On the 10th, a 1-Day Workshop of classes and demonstrations for the public was held.

- A 2 1/2-hour online GB video is in development by professional videographer, Matt Anderson, who produced EA's 2-Week Farmers Course videos. To be released this year, the video includes material taken from a recent 3-Day Workshop, plus footage from Latin American and African projects. Each segment of this wonderfully conceived production focuses on one of the eight key elements of GB and will be of educational benefit globally.

- Major educational initiatives for localization in Africa, described in previous issues of this newsletter, have been taken by Samuel Nderitu, the co-director of the award-winning Kenyan NGO, GBIACK, <http://www.g-biack.org/>.

- James Christie-Fougere and Sharon Combs, husband and wife team in British Columbia, Canada, are taking educational initiatives for Canada and beyond. See article on page one.

- John's Blog *Garden the Earth*, www.johnjeavons.org, offers topics of experience and wisdom gleaned from many sources that are added weekly.

- A program of reviews of hundreds of books on relevant practical topics is under development and will be available on the EA website.

- Funds have been raised for a part-time Librarian beginning in 2019 for our large collection of out-of-print and in-print books and articles.

- A program of monthly press releases on key topics has been initiated.

- Protocols for self-teaching GB Quality Assurance have been established, including protocols for soil, sustainability and compost. For more information on GB Quality Assurance, please visit

www.growbiointensive.org/index.html and click on the GROW BIOINTENSIVE tab near the top.

GB in the Aftermath of Hurricane María

By Elena Vanasse Torres, Puerto Rico,
EA 8-Month Intern applicant

Visit www.growbiointensive.org/Enewsletter/Archive.html, to read this article with live links.

lyptic veil over the so-called Free Associated State, the vast majority of Puerto Ricans lost reliable access to food. Because of [massive crop failure](#), and the fact that, on average, [ninety-five percent of food](#) in Puerto Rican markets is imported, the people were at a loss.



Photo: Camp Tabonuco staff

The Jayuya region of Puerto Rico.

Somewhere, 102 km from the urban center of San Juan, past the cerulean waters of Puerto Rico's northern coast, beyond the vast furrow of the central karst mountains, four months after the passing of Hurricane María, a *yautia* [*Xanthosoma*] plant emerges from dense red clay subsoil. This is the land where my great grandparents planted roughly five *cuerdas* (a *cuerda* is approximately 0.97 of an acre) of coffee trees, sugar cane, plantain, and countless fruiting trees, and where, decades later, an old *yautia* seed would be reborn in an unexpected path.

I have the great privilege of being able to live and work on these five *cuerdas* of land that have been in my family for three generations, land that prior to notions of private property and ownership was tended by my ancestors, Taino peoples of *Borikén* (Puerto Rico). Growing up witnessing the abundance of delicious tropical foods that the land can offer, I, like many of my peers, was frustrated by the exorbitant amount of imported food making it into Puerto Rican supermarkets and onto dinner tables, most of which could be grown in the rich, diverse soils of the island during its year-round growing season. When Hurricane María swept over Puerto Rico, amidst countless, [seemingly uncountable deaths](#), catastrophic flooding and landslides, and an overall apoca-

Puerto Rico's agricultural potential remains largely untapped. A [comprehensive publication](#) explores the fact that potential working lands, meaning lands well-suited for both mechanized and non-mechanized agriculture, encompass 42 percent of Puerto Rico's land area. Yet, only 22 percent of total land area, or [1977 square kilometers](#), is actively being farmed or pastured. According to an [NPR article](#), every acre of arable land on the island has the potential to be as much as three times more productive than any corresponding acre in the United States, making it curious that you are more likely to find eggs imported from Vermont, corn from the American Midwest, and *batata* from Costa Rica than anything homegrown at the local supermarket. In part, this can be traced to the [Jones Act](#), American farming subsidies, as well as cheap labor in developing countries. Moreover, only [three percent](#) of employed people in Puerto Rico are working in the agricultural sector, and not even half a percent of total female employment is in farming. The fact that such a small number of the Puerto Rican populace is dedicated to farming could be connected to a [wide-scale social project taking place in the 1940s](#), [Operation Bootstrap](#), designed by the US government to move Puerto Ricans out of the countryside, shifting

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Photo: Cynthia Raiser-Jeavons

EA's 3-Day Workshop Fall 2018

By Katharine Cantwell, Executive Assistant to the Director and Office Manager at EA

I had the awe-inspiring opportunity to participate in the 3-Day Workshop at the Ridgewood Ranch site along with my 21-year-old son, Cassidy. I've been working for Ecology Action since January 2018, and this workshop was a great way to round out the year. In the summer I shared the book *How to Grow More Vegetables* (HTGMV) with Cassidy, and he was excited about the great information and the encouraging news that shifts in gardening practices and climate change can be made with proper intent, and knowledge, backed by experience and science.

There were 24 participants, including the two interns from the Victory Gardens for Peace Mini-Farm. There were farmers and non-farmers—those who intend to farm, from as far away as Rhode Island and Toronto, Canada. It was a sweet mix of individuals and three couples. I appreciated the fact that about half of the participants were under the age of thirty. Cassidy shared with me that when he was talking to his peers in Santa Rosa about going to the workshop, many are interested in self-sustainability, which of course entails growing your own food.

We started with the true and heavy information of what's happening on our planet concerning climate change and the diminishing amounts of farmable land.

It's hard to hear, but the truth can be that way. The GROW BIOINTENSIVE method is a remedy not only for our food shortage problems, but also for our soil issues. It's good to have a global understanding and make the appropriate changes right where you live, by starting small, growing just a couple of beds and getting to know the land that you're growing on. Gabby, one of the interns, was great for energizing us all with stretching and a run around the classroom in between lectures to keep us on point.

The weather was outstanding, and I really enjoyed the garden activities. My favorites were the composting portion and the grain threshing. I'm looking forward to creating my own compost pile and to growing grains. Everyone was glad to be outside learning and sharing. The presenters, John, Matt, Jes and Ellen, were not just knowledgeable, but genuinely excited to share. The best teachers are the ones who love what they are teaching.

We had two group activities, which were engaging and really made you think. The first was 'What would you have to do to grow all your own food in five years?' We were asked to come up with year-by-year plans and get it all down on poster-size paper. It was interesting to see the different plans the participants created. The second activity was quite practical, 'Planning your own one-bed unit.' We used the Master Charts from HTGMV, and there was some math involved. John critiqued each plan with positive feedback. Gardening involves planning if you want to grow your food and soil.

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3-Day Workshop

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We had the great fortune to be fed by Cynthia, who used the 60/30/10 garden concept on our plates and bowls. Her soups were outstanding, and we had cornbread made by Ellen using grains from the Mini-Farm. The networking dinner was an incredible Indian meal with a divine raisin chutney. For dessert we had cheesecake made with all vegan ingredients (see recipe on p. 11). Good eats, along with good conversation, were had by all.

I believe great connections were made and people were pleased with the information that was presented. The workshop manual is a nice learning tool and a great reference for future use. I'm glad I got to share a crucial part of what we do at Ecology Action with my son. It's always inspiring to be in a room full of like-minded individuals.

Appreciation from Eden Garden, Kenya

By Hesborne Apida, Director of Eden Garden and Resource Services Program.

Dear John,

Greetings. My name is Rev. Hesborne Apida. I am Pastor of a Baptist church in Kisumu, Kenya, and founder and Director of Eden Garden Farm and Resource Services Program. I've had a good email correspondence with your office staff concerning our desire to partner with Ecology Action as we develop our Biointensive Agriculture Mini-Farm. Two years ago you sent us copies of HTGMV and other GB materials.

I wanted to express our appreciation for your support through these materials. They have greatly helped, and today our gardens are much improved. However, we continue to have challenges. We would like to partner with Ecology Action to learn GB skills so we may share successes and challenges and find solutions and joys for expansion. We have found GROW BIOINTENSIVE works. This season we planted tomatoes for the first time, and I tell you, the harvest is nothing I have ever grown before or seen anywhere, large fruit. Once we figure out a way to keep the birds from eating our tomatoes, we'll enjoy a greater harvest.

One of our goals is to serve as a demonstration center and teach the skills to support Care Givers to the many orphan children around us, the elderly, widows and

other vulnerable persons who often go hungry. The gardens will provide food, and we will sell the surplus to pay some of the children's school fees.

We chose the name Eden Garden because we want to emulate the Garden of Eden in the book of Genesis in the Bible. We believe we will get there with this vision.

Thank you to you and all your staff,
Rev. Hesborne Apida



Photo: Eden Garden staff

Rev. Apida and his son Ezekiel at Eden Garden, Kenya.

VGfP Apprentices Host One-Day Workshop

By Brooke Eichenlaub, Victory Gardens for Peace 1-Year Apprentice

The 2018 apprentices at the Victory Gardens for Peace held a One-Day GROW BIOINTENSIVE Workshop, October 2018. The workshop drew a group with diverse gardening and farming experience who cheerfully exchanged stories and food-growing ambitions.

We started the day with a tour of the site beginning with a visit to the Victory Gardens for Peace seed library, located on the grounds of The Stanford Inn by the Sea. With over 400 varieties of seed, the seed bank is an overwhelming display of the beauty and abundance of gardening in your own backyard.

A number of topics were covered in the workshop including winter-garden planning, companion planting, and whole-system sustainability. With 70-plus combined years of gardening and farming experience present in the class

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VGfP One-Day Workshop

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of 10, the group was alive with discussion. During one particularly engaging segment taught by Kimberley Fischer, VGfP Assistant Manager, students smelled, tasted, and admired locally adapted varieties of open-pollinated seed. Exclamations rose from the group about which new cultivars would be planted the following season and which plants were family-favorites for feeding pollinators and other beneficial insects in the garden.



Photo: Evan Mills

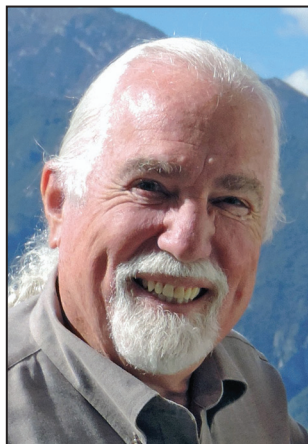
Part of the VGfP seed bank inventory.

Participants were also guided through hands-on composting, transplanting, and double-digging demonstrations that provided some technical feedback on common garden skills.

The Workshop concluded with a deliciously fresh and colorful lunch with foods from the garden. There is something special about being able to learn important, life-saving information with your neighbors and then enjoy the fruits of such labor together. Zack Wolf, one attendee of the workshop, said, "I feel that I was able to see an end result that was delicious and communal. Something that brought us together..." The whole day was a beautiful display of how gardening brings a sense of community and hope. Students left satisfied with full bellies and the knowledge of how to keep them filled.

EA Receives Scholarship Fund

By EA Newsletter staff



Ceres Trust, <https://cerestrust.org/>, supports the preservation and restoration of ecological, indigenous and farmer knowledge and other endeavors and believes in long-term relationships with grantees. Ceres Trust has supported Ecology Action with annual grants since 2009. They have recently honored Ecology Action's vision and mission by creating The Kent Whealy Scholarship

Fund for Ecology Action. This \$135,000 grant is for support of the 2019 Intern and Apprenticeship programs, with the understanding that it honors the legacy of the life and work of Kent Whealy.

Kent was well known for his groundbreaking work in preserving the genetic variability of our food crops, turning curiosity, vision, and hard work into the founding of the celebrated Seed Savers Exchange (SSE), www.seedsavers.org/. Beloved by gardeners and lauded by scientists, the SSE became the country's largest non-governmental seed bank, growing into a collection of 26,000 varieties of vegetables. Besides maintaining the collection on 23 acres of organic gardens, Kent also made the best of them available again to gardeners and greatly expanded the trade in open-pollinated seed through his inventories.

Numerous awards for Kent's genetic preservation efforts include a MacArthur Fellowship (1990), an honorary doctorate from Luther College in Decorah, Iowa (1991), and Russia's prestigious N. I. Vavilov Medal (1996).

As a trustee of Ceres Trust, which he joined in 2009, Kent was able to further his work in the genetic preservation of food crops and reinforce his opposition to the genetic modification of plants and the use of toxic chemicals in agriculture. For more information about Kent's initiatives, see <https://www.jakkawpress.com/about-us/>. Ceres Trust regrets to announce the passing of Kent Whealy on March 23, 2018.

Kent and his life continue to be an inspiration to us all!

Hutton Settlement Children's Home Embraces GROW BIOINTENSIVE

By David Milliken, Hutton Settlement Children's Home Campus Director

The Hutton Settlement Children's Home, located in Spokane Valley, WA, provides safe and healthy living opportunities for children ages 5 to 18 in need of a long-term alternative home. The campus consists of four large homes, supported by 319 acres of pristine natural settings with opportunities for learning and recreation. We believe in providing a safe home and family, relationships of compassion and respect, and hope and wholeness through opportunity.

As the Settlement celebrates its centennial in 2019, there will be a returning home for hundreds of alumni who have called Hutton home over the past decades. Many of those returning will recall the memories of wheat fields, orchards, and livestock that were central to the Hutton Settlement mission of providing long-term care for abused, abandoned and neglected children in the early years. Over the decades, with agricultural interests declining and food-producing regulations increasing, the farm disappeared from campus life.



Trevor, from Hutton Settlement, practices double-digging as John Jeavons, Director, and Kimberley, VGfP Asst. Manager, look on.

Today, as we enter a new century of long-term care for children in need, there is a resurgence of farm life at Hutton, largely led by a youth movement, to support food justice on campus and beyond. To capture and mobilize this young energy, the Hutton Settlement sent three staff and two youth to the 3-Day GB Mini-Farm-

ing Workshop in March 2018 to learn about small-scale sustainable farming. Gaining skills in the 8-step method of GB and receiving consultation from John Jeavons, Ecology Action's Director, the group returned home to restore the Hutton farm with an army of 15 children and staff desiring to be change agents. With teams of five, each with 400 square feet of garden beds, the group journeyed through the process of planning, experimenting and documenting their journey towards abundance. Within our first year, the garden has already produced the highest campus food yield in recent memory!



Residents work together to harvest tomatoes.

Photos: David Milliken

The skills of dryland mini-farming have been foundational to our garden success. However, the true miracle of the GB approach is in its expanded life-giving message that is shared with the children of the Hutton Settlement. Seasonal discussions in the garden centered around digging deeper to allow space for healing and support in our lives, relying on close-proximity diversity for healthy community, and leaving legacy seeds for the next generation. Double-digging, close companion planting, and seed collecting are valuable garden methods, but they are also ways to live a healthy human life and are certainly healing messages for children who have been forced into defended barriers, isolation, and hopelessness. I credit Ecology Action for helping to expose our children to a hopeful world of abundance and the opportunity to offer their gardens the very thing they often didn't receive—the deep nurturing, close relationship, and hope necessary to thrive. It is in this empowered action that the children of the Hutton Settlement are being transformed and healed.

Camp Tabonuco Teaches Personal and Environmental Resilience

www.camptabonuco.com/, www.facebook.com/camp-tabonuco/.

Elena Torres, Intern applicant, wrote about Camp Tabonuco in her application essay. Here is an overview of the organization, adapted from their website.

Puerto Rico's agriculture is equal to 0.8% of the island's gross national product. The island imports 95% of its food even though most of the land is fertile. Currently only 6% is arable, a fact that threatens Puerto Rico's food security. This agricultural situation has been caused by mismanagement of terrains, lack of alternative farming methods, a deficient agricultural workforce, and loss of farmland to hurricanes.¹ However, organizations like Camp Tabonuco are educating youths in skills and ideals that will help change the current agricultural situation. The farm is located in the Mameyes neighborhood of Jayuya, Puerto Rico. They focus on ecological education and serve a diversity of youth through farm visits, experiential camps and workshops focused on agroecology, the arts, natural construction and more.

Camp Tabonuco operates among fields of coffee, plantain and citrus with a rustic framework that includes a gazebo for activities, two bamboo cabins, composting toilets and outdoor showers. The camp runs completely off-grid with spring water and solar panels for electricity. Their mission is to empower Puerto Rican youth with

transformative learning experiences that cultivate social and ecological awareness and stewardship.

1. https://en.wikipedia.org/wiki/Economy_of_Puerto_Rico



Photo: Camp Tabonuco staff

Camp Tabonuco participants in an agroecological workshop.

Grassroots Seed Network (GSN): Sharing Seeds, Preserving Varieties, Democratically

By Jamie Chevalier, former horticulturist and catalog editor at Bountiful Gardens, owner of Quail Seeds and GSN board member. www.quailseeds.com/

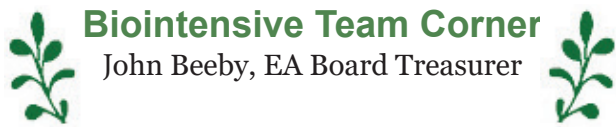


Heirloom corn grown at the VGfP. Photo by Evan Mills

Today many people understand the importance of heirloom seeds. There is a growing seed-saving movement, with seed libraries and seed swaps increasingly common. But one piece of seed restoration is still missing—the seeds themselves. While a few well-known heirlooms are offered commercially and grown coast-to-coast, the vast majority of our seed heritage is vanishing with the elderly gardeners and farmers who have preserved it thus far. Where is the bridge between urban seed libraries and the isolated communities where rare seeds still exist? How can young enthusiastic gardeners meet elderly seed stewards—often the last remaining guardians of rare varieties? Grassroots Seed Network <https://grassroots-seed-network.sharetribe.com/> exists to close that gap, putting those who save rare seeds in touch with those who would grow and care for them.

Genetic diversity is being lost at such a rate that we need to move quickly, and widely. The Grassroots Seed Network meets that need with its website. In order to include more elderly and immigrant seed stewards, and to recruit a new generation of seed savers, we have opened membership to all, free of charge. We provide logistical support for older seed stewards with major collections of seeds—sometimes hundreds of varieties are maintained by a single person. But to continue this work, and to widen its reach, we need your help. Whether or not you grow a garden, you can help grow a more diverse and abundant future with your contribution.

www.crowdrise.com/o/en/campaign/grassrootsseed-network.



Biointensive Team Corner

John Beeby, EA Board Treasurer

Soon after graduating college and working as a molecular biologist, I discovered my love of plants. After being introduced to the idea of plants as indicators of soil conditions, I began collecting and compiling papers, books and other publications on the subject. At the same time, I learned to garden and, with plant identification books in hand, started to apply the knowledge to my small garden. These experiences made it clear to me that I really enjoyed learning about plants and soil and wanted to learn more.



From 1992 to 1996, I worked with John Jeavons and Ecology Action, learning and eventually helping others to learn how to grow food with GROW BIOINTENSIVE® sustainable agriculture. During that time, I continued to develop my understanding of plants as soil indicators and wrote *Test Your Soil With Plants* now in its second edition. I also wrote a book on human waste recycling called *Future Fertility: Transforming Human Waste into Human Wealth*. Both books were published by EA and are comprehensive.

I currently reside in rural Ithaca, New York, with my wife Meghan and various companion animals. I work at Cornell University, managing their molecular diagnostic lab in the Animal Health Diagnostic Center, www.ahdc.vet.cornell.edu. I also operate Grow Your Soil, www.growyoursoil.org, a soil consulting service which develops customized recommendations for farmers worldwide for organic fertilizers that are available to them, based on their soil test results. In addition, I continue to develop Harvest Planner, www.harvestplanner.org, a web-based tool to help families design, plan and grow nutritionally complete diets sustainably. I am also an associate editor of *Renewable Agriculture and Food Systems*, and am involved as a consultant on projects in Africa and Latin America on minimizing the need for agricultural inputs and identifying indicator plants in Latin America. I joined EA's Board of Directors in 2018.

I currently reside in rural Ithaca, New York, with my wife Meghan and various companion animals. I work at Cornell University, managing their molecular diagnostic lab in the Animal Health Diagnostic Center, www.ahdc.vet.cornell.edu. I also operate Grow Your Soil, www.growyoursoil.org, a soil consulting service which develops customized recommendations for farmers worldwide for organic fertilizers that are available to them, based on their soil test results. In addition, I continue to develop Harvest Planner, www.harvestplanner.org, a web-based tool to help families design, plan and grow nutritionally complete diets sustainably. I am also an associate editor of *Renewable Agriculture and Food Systems*, and am involved as a consultant on projects in Africa and Latin America on minimizing the need for agricultural inputs and identifying indicator plants in Latin America. I joined EA's Board of Directors in 2018.

Cashew Lemon Cheesecake

This is the vegan cheesecake served at the Fall 3-Day Workshop. Taken from *I Am Grateful—Recipes and Lifestyle of Café Gratitude*. See book review on page 12. Makes a 9 1/2" cheesecake.

For the crust

2 cups almonds
1/4 tsp vanilla extract
1/8 tsp salt
3/4 cup chopped dates

For the filling

3 cups raw cashews, soaked
1 1/2 cups almond milk
1 cup lemon juice
3/4 cup agave nectar
1 tsp vanilla extract
1/4 tsp salt
3 Tbsps lecithin
1/4 cup raw, unscented coconut oil

To make the crust

In the bowl of a food processor fitted with the "S" blade, process almonds, vanilla, and salt until finely crumbled. Continue processing while adding small amounts of the dates until crust sticks together. Press crust onto bottom of 9 1/2" spring form pan that has been greased with some of the coconut oil.

To make the filling

Blend all ingredients except lecithin and the 1/4 cup coconut oil until smooth. Add lecithin and coconut oil and blend until well incorporated. Pour into the spring form pan with prepared crust and set in fridge or freezer about an hour, until firm.

Garnish

Top with lemon zest or slices, or fruit of your choice.



Photo: Pinterest

GB after Hurricane María

Continued from page 5

them into the urban, industrial sector to produce material goods, especially textile and garment production. A consequence of Operation Bootstrap caused fertile agricultural land, much of it previously dedicated to sugar cane cultivation, to lie fallow, while farming and the *Jibaro* (traditional Puerto Rican farmers) identity were rendered obsolete and “low-class”. In fact, even before the hurricane, [83 percent of the island's farms were smaller](#) than 50 *cuerdas* (48 acres), and abandoned family farms were all too common. For a time, it felt as if my family's farm was on the brink of contributing to that statistic.

The effects of Hurricane María brought to light the long-standing food security... crisis in Puerto Rico.

After my great grandparents passed, more than half of the growing area they established was lost to a thicket of wild grasses. The river at its basin became clogged by the spread of Climbing Dayflower (*Commelina diffusa*), greatly affecting the rest of the watershed. Their son, my grandfather, a physician in the San Juan metro area, was spread thin commuting every weekend just to keep things afloat. Next in line is my mother's generation, who overwhelmingly made new lives in the United States—among the 5.1 million Puerto Ricans living in the US, the [median age of island-born Puerto Ricans](#) is 47 years.

Despite the lack of tending, and later, a category-five hurricane, the fruiting trees and bushes planted and tended by my great grandfather recovered somewhat after four months, more so after a year: papaya, acero-la cherry, grapefruit, *pomarosa*, and the kind of mango that, picked ripe, is seemingly more delicious devoured—never neatly sliced. Eventually, there was just enough substrate for the *yautia* to come around, roots finding a safe haven in the deep soil; so did the *yuca* [*Manihot esculenta*] and *malanga* [*Colocasia*]. My grandfather hired locals to replant banana and plantain, among other staples my family brings from the countryside to their home in San Juan.



<https://sprudge.com>

Puerto Rican coffee farm in the wake of Hurricane María.

Two things become apparent: For one, the land has the miraculous ability to heal itself. Second, it is in the hands of the millennial generation [aged between 22 and 36 as of 2018] to not only salvage abandoned land and become stewards of family lands, but also, to mediate the effects of Hurricane María and learn to flourish in a world where tropical storms are projected to only increase in occurrence and intensity.

The effects of Hurricane María brought to light the long-standing food security and food sovereignty crisis in Puerto Rico. *Agroecología*, meaning an ecological way of managing agricultural and forest systems, had already explored this vulnerability and spread its teachings throughout the organic farming enclaves on the island. The work of [Boricuá](#), El Josco Bravo, Plenitud, Siembra Tres Vidas, and many others has been integral in both rooting and refreshing the movement. Before the hurricane, *brigadas*, a contextually relevant model of bringing multiple farmers together for collaborative projects, were already taking place since the 1970s. But when the hurricane decimated so many farms' seed stock, Boricuá mobilized to put quality heirloom seeds from their collection directly in the hands of farmers across Puerto Rico. Siembra Tres Vidas made a distinguished effort to organize in their community of Aibonito, rebuilding people's homes, and helping establish the community food hub that provided food and dinners for people in need. The University of Puerto Rico, Utuado horticulture and farming program is promising, too. Every year, a handful of young farmers emerge equipped to hit the land. If anything, the crisis brought many more people together to rethink how to feed themselves and their communities.

The GB method has great potential in the Caribbean, encouraging a much needed closed-loop system in designing a **Continued on page 13**

GB after Hurricane María

Continued from page 12

garden on limited land area. Double- and triple-digging while incorporating quality, home-grown compost has already been shown to radically improve soil structure. This practice, combined with intensive and companion planting, will eventually capture carbon from the atmosphere and increase crop yields, as has been demonstrated at a Biointensive site in Veracruz, Mexico, Bosque de Niebla, whose climate is similar to that of mountainous Puerto Rico. While the teachings of *Agroecología* are spreading throughout the island, GB would complement the movement by offering a data-driven approach to growing a nutritionally complete diet as well as offering opportunities for collaboration through a worldwide network of farmers and gardeners, including ECOPOL, the Latin-American stronghold for Biointensive agriculture. Ecology Action's tight methodology and global presence particularly resonated with me, and after completing the Three-Day GROW BIOINTENSIVE Workshop in Willits, CA, in 2018, I decided to pursue the 8-Month Internship on the more humid Mendocino coast.

The GB method has great potential in the Caribbean, encouraging a much needed closed-loop system...

Within the scope of five years, as a caretaker of my ancestral land, I hope to have taken the skills and connections gained from an 8-Month Internship to ultimately rehabilitate the land and watershed; build rich, resilient soil; become mostly self-sustainable in reducing all imported soil inputs; grow a nutritionally complete diet for my family, community, and self; create an extensive seed library, and connect with a larger network of Biointensive, agroecological farmers and gardeners in the Caribbean and beyond, especially through seed exchange.

I dream of creating a network of farmers that form a collective seed bank and support network through work parties and community dinners. One of our aims should

be to integrate youth participation, and ultimately, feed central Puerto Rico, thereby increasing the sovereignty of the region. I share, along with my peers, the dream of a food-sovereign rural Puerto Rico.

Months after limited connectivity, from spotty cell service to the widespread lack of electricity on the island, I was able to reach my grandparents in San Juan. We talked about my new life in Northern California, about their waiting in line all day to get diesel to power their generator, and finally the conversation came to the farm. Reluctantly, I asked my grandfather how things were growing back. "The farm has seen better days," he said, "but it's doing alright." Like a *yautia* plant, the land finds its way.

"Imagine if the grocery store had an indoor or outdoor organic garden and they picked their own produce. Imagine what it could teach the next generation."

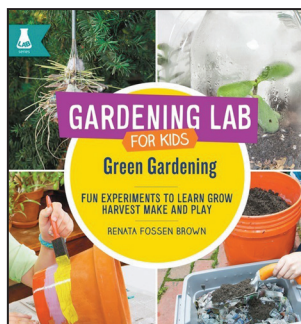
—Mary Breath Bends

Book Reviews

Green Gardening: Gardening Lab for Kids

by Renata Fossen Brown (Quarto Publishing, 2018)

Review by Lerner Books



A refreshing source of ideas to help children learn to grow their own patch of earth, *Green Garden: Gardening Lab for Kids* encourages children to get outside and enjoy nature. This fun and creative book features 13 plant-related activities set into weekly lessons. Renata

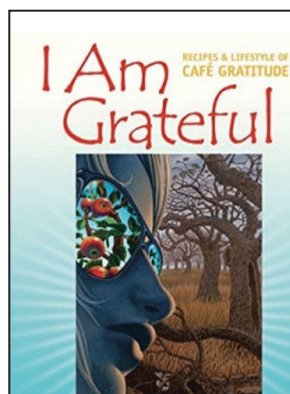
Fossen Brown guides your family through fun opportunities learning about botany, ecology, the seasons, food, patience, insects, eating, and cooking. The labs can be used as singular projects or to build on experiences. The lessons in this book are open-ended to be explored over and over—with different results each time! So, slip on your muddy clothes, and get out and grow!

I Am Grateful—Recipes and Lifestyle of Café Gratitude

by Terces Engelhart with Orchid

(North Atlantic Books, 2007)

Review by Amazon



With locations in Venice, Santa Cruz, San Diego and Los Angeles, California, Café Gratitude has become well known for its inspiring environment and distinctive, flavorful organic foods. In *I Am Grateful*, co-founder Terces Engelhart presents her and her husband Matthew's view of life and business philosophy. She also presents her story of personal healing,

sharing highlights of her recovery from food addiction while explaining the benefits of eating raw foods. The book's gorgeous full-color photographs accompany easy-to-follow recipes for the café's most popular items, making it easy for readers to prepare live foods at home.

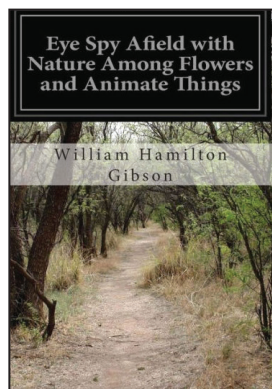
Eye Spy: Afield with Nature among Flowers and Animate Things

by William Hamilton Gibson

(Harper & Brothers Publishers, 1899)

Review by John Jeavons

Here is another astounding exploration of the Natural World for children and all of us! The age of this publication only increases its usefulness.



Topics include:

- A Naturalist's Boyhood
- Fox Fire
- The Fairy Sponges
- Green Pansies
- Mr. and Mrs. Tumble-Bug
- The Horse-hair Snakes
- Professor Wiggler
- The Spider's Span
- Ballooning Spiders
- The Lacewing Fly
- The Perfumed Beetles
- Cow-spit, Snake-spit and Frog-spit
- A Homely Weed with Interesting Flowers
- The Story of the Floundering Beetle
- The Paper Wasp and His Doings
- Mushroom Spore-prints
- Some Curious Cocoons
- Nettle-Leaf Tent-Builders
- The Primrose
- The Dandelion Burglar
- The Troubles of the Housefly
- Tendrils
- A Strange Story of a Grasshopper
- Riddles in Flowers
- Luck in Clovers
- Barberry Manners
- A Woolly Flock
- "What Ailes Him?"
- The Cicada's Last Song

This book, with its numerous drawings and photos, is fun! One can only wish there were more. Available for purchase, as well as free ebook formats, from Gutenberg.org, www.gutenberg.org/ebooks/38954.

ECOLOGY ACTION'S GARDEN COMPANION

~ Published three times a year ~

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Since 1972, EA has been researching and demonstrating the growing edge of sustainable food raising and making this knowledge available to people everywhere.

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In addition to your project specific support, please consider increasing your general support so that we may continue to expand the availability of this fundamental knowledge to people everywhere—and grow a healthier, fairer, more hopeful tomorrow for us all.

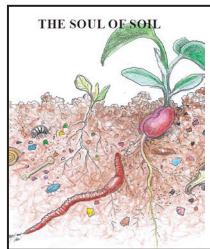
John Jeavons' Recent Podcasts



Gardenerd: The Ultimate Resource for Garden Nerds, <https://gardenerd.com/>.

Gardenerd interviewed Jeavons in October 2018. To hear the interview, visit <https://gardenerd.com/blog/podcast-grow-biointensive-with-john-jeavons/>.

TUC Radio—Time of Useful Consciousness, <http://tucradio.org/>.



This podcast is part of a mini-series on soil. It includes the essay Soul of Soil, beautifully illustrated and available at the link below.

<http://tucradio.org/podcasts/newest-podcasts/the-soul-of-soil-john-jeavons/>.

https://johnjeavons.org/wp-content/uploads/2018/06/soulofsoil_v1.pdf.



Urban Farm U provides inspiration, knowledge and tools that promote and encourage healthy lives and environments so you can pursue your goals and dreams of a healthier

life. www.urbanfarm.org/.

Jeavons' interview is available here, www.urbanfarm.org/blog/guests-by-name/.

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◇ EA Events ◇

May 5

Ecology Action's Research Mini-Farm/Garden Full Tour, Victory Gardens for Peace, Mendocino, CA.

www.growbiointensive.org/events_main.html?tab=0#.

June 1–July 27

Ecology Action's GROW BIOINTENSIVE® Sustainable Mini-Farming 2-Month Internship. Application deadline: May 1; acceptance notice by May 15. See

www.growbiointensive.org/SummerInternship/index.html.

June 1–October 12

Ecology Action's GROW BIOINTENSIVE® Sustainable Mini-Farming 4-Month Internship. Application deadline: May 1; acceptance notice by May 15. See

www.growbiointensive.org/SummerInternship/index.html.

Ecology Action Newsletters are available online at growbiointensive.org/Enewsletter/archive.html.

To view a complete list of GROW BIOINTENSIVE classes and upcoming activities visit growbiointensive.org/events_main.html.

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