Sow a Cool Harvest
Faith garden ideas for a cooler planet

A program of Interfaith Power & Light
www.coolharvest.org
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WHAT IS CoolHarvest?

Thank you for participating in Interfaith Power & Light’s CoolHarvest program — a food, faith, and climate program for congregations interested in responding to climate change through educating their members about climate-friendly food choices and engaging them in activities, such as organic gardening, that can inspire and have a positive impact. The program, with its two free downloadable units and suggested companion DVDs*, is brought to you by Interfaith Power & Light.

Modern agribusiness — that favors toxic pesticides, petroleum-based fertilizers, GMO foods (genetically modified), distant farm-to-plate transportation, and the factory farming of animals — exacts a heavy toll on the atmosphere. It is estimated that nearly one-fifth of climate change pollution comes from the food industry.

With Cool Harvest, your congregation can become part of the solution:

**Sow a Cool Harvest** has an organic gardening focus for faith communities that are interested in participating in the local, healthy food movement in response to climate change. Don’t have the space or time for a garden? There are other tips you can use, such as, how to green your pantry or host a local farmers’ market.

**Companion DVD** - DIRT! The Movie (85 min.). DIRT! takes you inside the wonders of the soil. It tells the story of Earth’s most valuable and underappreciated source of fertility--from its miraculous beginning to its crippling degradation, and the emerging appreciation of beauty, power and wisdom of dirt, and the mutually beneficial relationship we can have with soil.

**Enjoy a Cool Harvest** is our entry-level “potluck dinner and a movie” program for faith communities to gently raise awareness about the rather large, but not often discussed, connection between our daily food choices and global warming.

**Companion DVD** – Nourish (30 min.). With beautiful visuals and inspiring stories, Nourish traces our relationship to food from a global perspective to personal action steps. Nourish illustrates how food connects to such issues as biodiversity, climate change, public health, and social justice.

*IPL has secured a significant discount on the companion DVDs from the producers on the films DIRT! The Movie And Nourish, and we’re offering the films for $15/each, which includes shipping and handling. If you already ordered your DVD, it will be arriving soon in the mail. If you haven’t yet ordered the DVD of your choice, you can do so by visiting: [www.coolharvest.org](http://www.coolharvest.org)
Most of our food travels a long distance from the farm to our plate. The average American diet relies heavily on crops grown in barren soils with the use of petroleum-based fertilizers and pesticides. Healthy soils are natural “carbon sinks” – that means they absorb more carbon than they release, and thus protect us from climate change. However, around 3 billion tons of topsoil is eroded from the United States’ croplands each year. In big agribusiness farming, the soil is used more as a medium for holding plants in a vertical position so they can be chemically fertilized. As a result, American farms are suffering from the worst soil erosion in history.

These are some of the reasons that more and more people are flocking to the local, organic food movement. It’s an excellent way to respond to climate change and it’s better for your health and the environment.

Organic Gardening Is Better for Your Health
It turns out what is most healthful for our climate is also best for our health. Many studies have shown that organically grown food has more minerals and nutrients than food grown with synthetic fertilizers, pesticides and herbicides. Chefs often prefer organic foods in their recipes because they taste better and guests prefer them. The EPA considers 60 percent of all herbicides, 90 percent of all fungicides and 30 percent of all insecticides carcinogenic. The National Academy of Sciences reports that pesticides may cause an extra 4 million cancer cases among Americans.

Organic Gardening Protects Water Quality
The U.S. EPA estimates that pesticides from agriculture have contaminated groundwater in 38 states. Agricultural run-off is also reaching the ocean and affecting sea life. Fertilizer used on Midwest farms is carried down the Mississippi River and emptied into the Gulf of Mexico. The run-off is largely responsible for an 8,000 square mile marine dead zone that forms off the coast of each spring. The nitrogen and phosphorus in the fertilizer spurs algae growth, depleting oxygen in the water, and killing off fish. Furthermore, the increased nitrous oxide produced in oxygen depleted waters can elevate in the atmosphere -- fueling global warming. Nitrous oxide is a potent greenhouse gas.

Organic Gardening Promotes Biodiversity
Organic gardens are rich with variety, and this means your garden will be more resilient to pest infestation or drought. Monocropping is the practice of planting large plots of land with the same crop year after year, a common big agribusiness practice. This lack of natural diversity of plant life has left the soil lacking in natural minerals and nutrients, and single crops are also much more susceptible to pests, making farmers more reliant on pesticides.
Local organic gardening is an American tradition that is being rediscovered by families, faith communities, schools, and even the White House, to address some of these problems. First Lady Michelle Obama dug up a section of the south lawn of the White House to plant a kitchen garden. This garden now is a source of fresh produce for the hungry in the neighborhood as well as the first family and White House staff, and has served as powerful example to the country.
Model FAITH GARDEN STORIES

One of the first steps in creating a garden is planning. As you imagine and consider what type of garden your congregation might like to create, we thought it would be helpful and inspirational to include real garden success stories from our very own Interfaith Power & Light Cool Congregations. Our Cool Congregations Challenge has a category every year for “Grounds and Water Conservation” and these were cream of the crop. In these stories, you will also find great tips for water conservation!

Central United Methodist Church
Charlotte, NC
Handicapped Access Garden

Central United Methodist Church, located in an ethnically and socioeconomically diverse urban area of Charlotte, NC, has furthered its environmental stewardship and education mission, by creating a community garden to benefit congregants, local residents, and the church’s food pantry. This outreach provides an opportunity to grow produce on a small carbon footprint while educating the community about the many environmental benefits of “growing local.” Using volunteer labor and fundraising, Central developed 24 plots, including raised beds for handicapped access and irrigation from a natural water source. Formerly a barren area adjacent to the parking lot, volunteers “harvested” debris, tilled, amended and fenced the space. To preserve water and enrich soil, volunteers tilled in 48 cubic yards of compost made from county recycled yard waste. The majority of Central’s active membership of 125 people participated in the project. This year’s harvest was plentiful, providing locally grown produce to congregants, neighborhood gardeners, and the church’s food pantry, which serves families from a local high-poverty, high-ESL elementary with whom Central partners. A celebration and fundraiser was held in October, where a meal including “fruits of the harvest” was shared by the congregation and neighborhood participants, along with a sustainability workshop covering composting to preserve water and complementary crop planting, combined with rotation, to preserve the land.

St. Alban’s Episcopal Church
Atlanta, GA
Jail Garden

St. Alban’s Episcopal Church recently created a football field-sized organic “jail garden” by partnering with Walton Wellness and the Walton County Sheriff’s office. The Sheriff provided the land and the supervised workers, who are inmates. Each inmate receives a day off of his or her sentence for each day worked in the garden. St. Alban’s parishioners provided time, tractors for plowing, natural cow, chicken and horse fertilizer, gardening knowledge and money for supplies, fencing and tools. They also received organic gardening guidance from a local organic grower. The vegetables that are grown are given to those in need in Walton County with St. Alban’s serving as a distribution point. There were at least 256 families (about 480 individuals) who were provided with a box of vegetables each week.
last summer. The garden was a help to the climate by saving gasoline for produce that didn’t have to be shipped into the area; by using organic growing practices, which saved on the manufacture, shipping and application of pesticides and fertilizers; and by inspiring the community to grow sustainable gardens. Many of the inmates have said they will grow a garden when released, as have many others in the community. The garden gives St. Alban’s a chance to be on the forefront of keeping God’s Creation clean, while feeding people who are in need.

St. Michael’s Parish
Milwaukee, WI
**Urban Garden with Rain Water Storage**

St. Michael’s created a community garden with a rain water collection system to model environmentally friendly practices that parishioners could carry into their lives and which could serve as a model for the surrounding neighborhood. Through a partnership with Nehemiah Project’s Seeds of Growth Employment Education Training Program they were able to provide urban youth with the experience of growing their own food. After receiving permission to beautify a corner nearby, the parishioners, together with Nehemiah youth, trimmed trees and brush, picked up garbage, tilled the ground and prepared it for planting. They sought expert gardening advice from Milwaukee Urban Gardens and the Victory Garden Initiative. The Milwaukee Metropolitan Sewerage District donated a rain barrel that the Milwaukee Community Service Corp installed it. Two large water totes were donated and installed by parish members, creating a total water holding capacity of 485 gallons for the garden. The rainwater collection system promotes the use of rainwater rather than city water and it keeps the relatively clean roof water out of the sewer system. The community garden provided a positive gardening experience for urban youth who had no previous experience with gardening. Based on the garden’s success over two years, the congregation has received permission to expand the project to other vacant city lots in their area.

Adat Shalom Reconstructionist Congregation
Bethesda, MD
**Core Values Garden**

Adat Shalom’s Mishnah Garden, now beginning its third season, has become a key part of Adat Shalom’s spiritual and physical landscape. Its name comes from the defining work of early rabbinic Judaism; the first of the Mishnah’s six sections is Z’rai’m or “Seeds”. Everything about their garden unites the study of Torah with its practice. Located just past their high-traffic social hall doors, the Mishnah Garden is already a focal point for the community, a place that unites members across generations, interests, and demographic groups. The garden also unites several core values: tikkun olam / ‘repair the world’ (less grass and fewer pesticides); shmirat ha’adamah / ‘care for Creation’ (bring forth food organically using our own hands); ha’achalat re’evim / ‘feeding the hungry’; and v’shinantam l’vanecha / ‘inspiring our children’ (our 200 religious school students also help in the garden). This year, they donated 160 pounds of food to two different soup kitchens (applying skills learned from communal planting or

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from being a weekly “Harvest Host”, congregants donated another 40 pounds from their personal gardens. Still more ultra-local produce was served enjoyed at their weekly Sabbath luncheons, making the entire community invested in the garden. Individually and communally, the Mishnah Garden has taught Adat Shalomers to be more responsible eaters. Newly re-rooted in our history, values, and Earth, the future looks bright.

Berea Mennonite Church
Atlanta, GA
Garden with a Well

Berea Mennonite Church is a small congregation that tilled its 3-acre yard to start an organic farming ministry. The red Georgia clay on which the church is situated along with the summer drought in 2010 caused the congregation to evaluate the stewardship of water resources. Irrigating the garden was consuming upwards of $4000 in city water in just two months, so they decided to drill a well. The cost was $6500, but they recouped their money in just one year. In addition, the well provides them with non-chlorinated water for irrigating plants and saves around 20,000 gallons of city water from reservoirs. The University of Georgia River Basin Science & Policy Center recommends examining all types of conservation to reduce demands upon reservoirs during peak summer months. While their church garden irrigation was a drop in the bucket compared to the 28-million gallons of water used daily in Atlanta, the church deemed it an ethical imperative to put in the well. They wanted to model good stewardship of the Earth, respecting all systems and life forms the water supports. Members are active in farming the land, selling the healthy produce at farmers’ markets, recruiting volunteers and farm interns to join the farm, putting up necessary fencing, and generally sharing in the farm labor.

Covenant Lutheran Church
Houston, TX
Starting Small and Growing

There is a saying that if God takes you to it, he’ll get you through it. That’s how a small group of women in Texas said they felt when they suggested setting up a garden on a section of their church’s 10-acre property. Fortunately in Houston, there’s a nonprofit organization called Urban Harvest that specializes in helping people form community gardens. With their garden plan in hand and some seed money from bake sales, they were off and running. However, they were a bit intimidated to manage the cement blocks and heavy soil needed for their raised beds. So the four ladies recruited strong people from the congregation and the boy scouts to build (6) 4 ft. by 12 ft. plots, which were raised 8 inches. The soil came from a local company that specializes in composted and organically fertilized soil. A member from the congregation installed a drip irrigation system in the plots to reduce water use. A wire fence was placed around the whole garden and another member made a compost pile. The garden plots were split between church members and community organizations. One of the plots was reserved for four ladies, who often end up giving their produce to the congregation. They hope more plots will be built to allow others in the community to learn about sustainable gardening and enjoy the benefits of organically grown vegetables.
The organic garden at Forest Lake Presbyterian Church has become a model that local and out-of-state church groups tour to gather ideas to bring home. The Sustainable Midlands even held a workshop at the church, focusing on the gardens, their Earth Sunday study of beneficial insects, and watershed responsibilities. Last year, the garden produced 325 pounds of produce for Harvest Hope Food Bank. The children plant and harvest the vegetables, along with adult volunteers in raised beds. The beds are constructed of long-lasting Trex, a product made from sawdust, used wood pallets, and recycled plastic grocery bags and are filled with an organic mushroom compost mixture. Members are encouraged to plant their own gardens, and a basket is provided for donations from their gardens to the food bank. Food waste and scraps from their kitchen and leaves go into the compost bin; rain falls into their rain barrel and is used on the flowers but not the vegetables, as some of it comes from the roof and might not be compatible with organic gardening; a drip irrigation system prevents water waste and evaporation because the water goes directly into the soil at the base of the vegetable plants. Heavy mulch prevents water loss. Marigolds, basil, rosemary, mint, and other flowers and herbs are planted to repel harmful insects. A beautiful bubbling solar fountain provides water for the birds. Potatoes were planted in vertical bins to maximize water use and ease of harvesting. Watering from the top of the bin sent the water through the five or six layers of potatoes. In preparation for Earth Sunday, the children study beneficial garden insects—bees, ladybugs, earthworms, and butterflies.
Creating A RAISED BED GARDEN

Introduction
While planting a garden directly in the ground is always an option, raised bed gardens have many advantages.

Raised beds reduce soil compaction, create good drainage, and provide a clearly defined area in which to improve soil. They can also reduce water consumption and often produce a higher yield in the same amount of space. Further, they can be built in a way that makes your garden accessible for persons with limited mobility.

There are many creative ways of constructing raised garden beds that improve the landscape of your congregational property.

Planning Your Garden

The Vision of your Garden
Form a small group of 3-8 people to begin planning your garden. If you start planning in the winter months, you'll be ready to start planting by the last frost date. Begin by discussing the long-term vision and goals of your congregational garden. Do you see this as a space where community members will be welcome to come and use plots? Do you hope to contribute produce to local food banks? How will you incorporate the garden into your congregation’s worship life? Next, consider what kind of energy and volunteer support you might have within the broader congregation. Start developing strategies to encourage folks to be involved in the work of the garden. You’ll need a base of support that extends beyond the planning committee if your project is going to be sustainable.

Garden Location
After these broader discussions, consider where you will put your garden. Is there one primary open space, or should you scatter several raised beds throughout the property?

Take a walk around the property, and consider the following factors:

- **Sunlight:** Your spot needs at least 6 hours of full sun. You may also plant some vegetables in areas with 4 hours of morning sun and dappled shade in the afternoon, but that is the minimum amount of sun needed for growing. The sun rises in the east, and an easterly exposure will usually give you the most sunlight. Notice how surrounding trees cast their shade, and consider what your plot will look like when foliage is full.
- **Water Access:** You need an easy water source for your garden (besides the sky!). Make sure you have what you need to water your garden. You can use hoses, drip irrigation, or water your plants by hand.
- **Ground Slope:** Though the ground doesn’t have to be completely level, planting on a flat area will simplify the building process.
Planning the Garden Beds

After these considerations, start thinking about how many beds you want to put in and what size they will be. In the first year, err on the side of small. Even if you have a lot of excited volunteers ready to work, it’s best to take things slow at first, and then expand once the garden is established.

A four-foot wide bed is ideal for most vegetable crops. This width enables you to reach the entire bed from the side without ever stepping on and compacting the soil.
The length of the bed is more flexible, and you can use whatever length makes the most sense for your space. Your garden’s soil depth should fall within the 8-12” range. A 10” minimum allows you to plant root vegetables.

Accessibility Information

If you want to make your beds accessible, keep the following measurements in mind:

- Raised beds for a wheelchair user should be about 2 to 3 feet high.
- Forward reach from a wheelchair without bending, is about 30 inches.
- Beds with access on just one side should be no wider than 2 to 3 feet.
- Beds with pathways all around can be 4 to 5 feet wide depending on the gardener’s reach and upper arm strength.

Preparing for Construction

Raised beds can be made from a variety of materials. One easy option is to use untreated construction lumber. Avoid pressure treated wood.
Other possible materials include brick, concrete blocks, stacked broken concrete, purchased stacked stone, wine bottles on end, or logs. These options will not deteriorate as quickly as wood. Consider reusing materials, and be creative!

Constructing a raised wooden bed is simple. Start with 10x2 (whatever length you want) boards. Remember, do not use treated wood in your food beds.

Other types of wood can be used, but yellow pine boards work well. They are thick, will last for years, and are well worth the small investment. Home improvement stores will cut your wood to the length you need for your raised beds.
Materials needed

- Materials for raised bed (untreated wood, bricks, stone, etc.)
- 1 box of 4” galvanized screws
- 1 smaller box of 2 ¾” galvanized screws
- Drill and drill bits that correspond to your screws of choice (no nails, screws make boards easy to replace).
- 1 box of tall wooden yard stakes (found in the contractors department)
- Hammer, mallet, or brick
- String
- Measuring tape
- Hoe or rake
- Cardboard
- Top soil, compost, and aged manure to fill your beds

Installing the Beds

Constructing the Beds

Before you begin, make sure the soil is relatively level. Then stake out your raised beds using the string, measuring tape, and hammer. This will frame the box, and the stakes will also bolster the interior corners of your beds. For raised beds over 4’x4’, add stakes in the mid-points of the boxes as well.

Use your materials, whether it’s wood, bricks, concrete blocks, or something else, to construct your raised bed around the stakes. If you are using wood, screw the corners directly into the stakes to secure the boards. Double-check to see how level your frame is. If one side is significantly higher, dig out some of the sod from beneath it until it lays more level. This will help prevent water runoff.

Filling the Beds

Lay cardboard or newspaper down on the bottom (to suppress weeds), and then fill your raised beds with soil. If the soil below your beds is particularly compacted, or if your raised beds are not tall enough for plant roots to develop, you should loosen the soil with a fork or shovel before laying down the newspaper. Fill the bed with a good mixture of topsoil, compost, and aged manure. Many congregations enlist the help of local master gardeners to help them locate soil. Find some help by partnering with a local organic farm or University Extension Service. The best way to find local help is by using Google.com, and searching for “master organic gardener” along with the name of your town or city. This will provide you with ample places to find people that can point you in the direction of locating good free or inexpensive starter soil to ensure a healthy start for you garden. You can also find initial soil and compost from most garden centers. Or ask members of your congregation if they have compost you can use. Some county municipal centers also offer free compost and mulch. After filling the beds, rake the soil until it’s level, and you’re ready to plant!

This Garden Installation unit was generously contributed to the “Sow a Cool Harvest” program by Georgia Interfaith Power & Light’s Dirt Wise program. To obtain their complete “Dirt Wise” gardening curriculum for congregations, which includes ten study sessions on the relationship between gardening, food, and faith, visit www.gipl.org.
Making Your Own WORM COMPOST BIN

Composting with red worms is great first compost bin for those interested in learning how to compost. And kids love worms! By letting worms eat your food wastes, you’ll end up with one of the best soil amendments available—worm castings.

Materials Needed to Make an Easy Harvester Worm Bin

- Two 8-10 gallon plastic storage boxes (dark, not see through!) as shown in pictures (cost: about $5 each)
- Drill (with ¼” and 1/16” bits) for making drainage & ventilation holes
- Newspaper
- About one pound of red worms

Why Red Worms?

Not all earthworms can be used for worm composting, or kept in an indoor bin. Most yard worms are of the “anecic” type – that is to say they’re soil dwelling worms that create burrows and tend to lead a somewhat solitary existence (they need their space). The worms ideally suited for composting on the other hand are referred to as “epigeic”. This group tends to live in rich organic material (not soil), and is adapted to crowding and warmer temperatures. By far, the most common variety of composting worm is the red worm or red wiggler. You can buy them online inexpensively.

Step 1

Drill about twenty evenly spaced ¼” holes in the bottom of each bin. These holes will provide drainage and allow the worms to crawl into the second bin when you are ready to harvest the castings.

Step 2

Drill ventilation holes about 1 – 1-½ inches apart on each side of the bin near the top edge using the 1/16 inch bit. Also drill about 30 small holes in the top of one of the lids.

Step 3

Prepare bedding for the worms by shredding newspaper into 1-inch strips. Worms need bedding that is moist but not soggy. Moisten the newspaper by soaking it in water and then squeezing out the excess water. Cover the bottom of the bin with 3-4 inches of moist newspaper, fluffed up. If you have any old leaves or leaf litter, that can be added also. Throw in a handful of dirt for “grit” to help the worms digest their food.

Step 4

Add your worms to the bedding. One way to gather red worms is to put out a large piece of wet cardboard on your lawn or garden at night. The red worms live in the top 3 inches of organic material, and like to come up and feast on the wet cardboard! Lift up cardboard to gather the red worms. An earthworm can consume about 1/2 of its weight each day. For example, if your food waste averages 1/2 lb. per day, you will need 1 lb. of worms or a 2:1 ratio. There are roughly 500 worms in one pound. If you start out with less than one pound, don’t worry they multiply very quickly. Just adjust the amount that you feed them for your worm population.
Step 5
Cut a piece of cardboard to fit over the bedding, and get it wet. Then cover the bedding with the cardboard. (Worms love cardboard, and it breaks down within months.)

Step 6
Place your bin in a well-ventilated area such as a laundry room, garage, balcony, under the kitchen sink, or outside in the shade. Place the bin on top of blocks or bricks or upside down plastic containers to allow for drainage. You can use the lid of the second bin as a tray to catch any moisture that may drain from the bin. This “worm tea” is a great liquid fertilizer.

Step 7
Feed your worms slowly at first. As the worms multiply, you can begin to add more food. Gently bury the food in a different section of the bin each week, under the cardboard. The worms will follow the food scraps around the bin. Burying the food scraps will help to keep fruit flies away. What do worms like to eat? Feed your worms a vegetarian diet. Most things that would normally go down the garbage disposal can go into your worm bin (see the list below). You will notice that some foods will be eaten faster than others. Worms have their preferences just like us.

Feeding your worms

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<th>Worms Hate</th>
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<tr>
<td>Breads &amp; Grains • Cereal • Fruits • Tea bags</td>
<td>Dairy Products • Fats • Meat • Feces • Oils</td>
</tr>
<tr>
<td>Coffee grounds &amp; filter • Vegetables</td>
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When the first bin is full and there are no recognizable food scraps, place new bedding material in the second bin and place the bin directly on the compost surface of the first bin. Bury your food scraps to the bedding of the second bin. In one to two months, most of the worms will have moved to the second bin in search of food. Now the first bin will contain (almost) worm free vermicompost. (You can gently lift out any worms that might remain, and place them in the new bin, or put them into your garden!)

Troubleshooting

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<th>Probable Cause</th>
<th>Solution</th>
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<tbody>
<tr>
<td>Worms are dying or trying to escape</td>
<td>Too wet Too dry Bedding is used up</td>
<td>Add more bedding Moisten bedding Harvest your bin</td>
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<tr>
<td>Bin stinks!</td>
<td>Not enough air Too much food Too wet</td>
<td>Drill more ventilation holes Do not feed for 1-2 weeks Add more bedding</td>
</tr>
<tr>
<td>Fruit Flies</td>
<td>Exposed food</td>
<td>Bury food in bedding</td>
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Top Ten BENEFICIAL GARDEN INSECTS

A garden is a buggy place. Garden plants attract insect pests by the dozens, from aphids to slugs. But before you reach for an insecticide, take another look at the insects in your planting beds. While the pests are devouring your squash and tomatoes, another wave of insects is coming to the rescue.

Beneficial insects prey on the pests gardeners detest, keeping insect populations in check. You should learn to recognize these top 10 beneficial insects in your garden.

1. Green Lacewings

Most of the beautiful adult lacewings feed on pollen, nectar, and honeydew. Green lacewing larvae, however, are voracious predators. Nicknamed “aphid lions,” the larvae do an impressive job of devouring aphids by the dozens. Larvae hunt for soft-bodied prey, using their curved, pointed mandibles to stab their victims. Pictured: Green lacewing eggs (left), A green lacewing (right).

2. Ladybug Larvae

Everyone loves a ladybug, but gardeners hold them in especially high regard. Ladybugs eat aphids, scale insects, thrips, mealybugs, and mites – all the pests gardeners despise. With lady beetles, you get more bang for your buck, because both the adults and the larvae feed on pests. Lady beetle larvae look like tiny, colorful alligators. Learn to recognize them, so you don’t mistake them for pests. Pictured left: Ladybug larvae eggs. Pictured right: Ladybug larvae.

3. Assassin Bugs

Assassin bugs know how to take care of business. These true bugs use trickery, disguises, or just plain brute force to capture a meal. Many assassin bugs specialize in certain kinds of prey, but as a group, assassins feed on everything from beetles to caterpillars. They’re fun to watch, but be careful handling them because they bite – hard. Pictured: Assassin bugs.
4. Praying Mantids

Praying mantids can handle even the largest pests in the garden. You need a good eye to spot one, because their coloration and shape provide them with perfect camouflage among the garden plants. When the nymphs hatch, they’re so hungry they sometimes eat their siblings. In fact, praying mantids are generalist predators, meaning they’re just as likely to eat a helpful lady beetle as they are to catch a caterpillar. Pictured: A praying mantid.

5. Minute Pirate Bugs

Arrgggh. You probably have minute pirate bugs in your garden, and don’t even know it. Minute, indeed – these predators are tiny! Minute pirate bugs usually measure a mere 1/16th inch long, but even at that size, they can put away a good number of aphids, mites, and thrips. Next time you’re in the garden, take a hand lens and search for them. Adults have black bodies with a white chevron pattern on their backs. Pictured: A minute pirate bug.

6. Ground Beetles

You’ve probably overlooked the ground beetles in your garden. Lift a stepping stone, and you might see one skittering away. The dark-colored adults often have a metallic sheen, but it’s really the larvae that do the dirty work of pest control. Ground beetle larvae develop in the soil, and prey on slugs, root maggots, cutworms, and other pests on the ground. A few species will venture up a plant stem and hunt for caterpillars or insect eggs. Pictured: Ground beetle larvae (left), ground beetles (right).

7. Syrphid Flies

Syrphid flies often wear bright markings of yellow-orange and black, and can be mistaken for bees. Like all flies, though, the syrphids have just two wings, so take a closer look if you see a new “bee” in your garden. Syrphid maggots crawl on garden foliage, searching for aphids to eat. They’re quite good at squeezing in the curled up leaves where aphids hide, too. As an added bonus, the adults will pollinate your flowers. Syrphid flies are also called hover flies, because they tend to hover over flowers. Pictured: Syrphid fly eggs (left), a syrphid fly (right).
8. Predatory Stink Bugs

Though many stink bugs are plant pests themselves, some predatory stink bugs keep pests in check. The spined soldier bug, for example, feeds on caterpillars, sawfly larvae, and grubs. Most predatory stink bugs are generalist feeders, so they might also devour your lady beetles or even their own kin. You can recognize stink bugs by their shield-shaped bodies, and the pungent odor they produce when disturbed. Pictured: A predatory stink bug.

9. Big-Eyed Bugs

Predictably, you can distinguish big-eyed bugs from their closest relatives by looking at their large, bulging eyes. Like many other true bugs, their bodies are oval and somewhat flat. Big-eyed bugs are quite small, reaching an average of just 1/8th inches in length. Despite their diminutive stature, both adults and nymphs feed heartily on mites, aphids, and insect eggs. Pictured: a big-eyed bug.

10. Damsel Bugs

Damsel bugs use thickened front legs to grab their prey, which includes aphids, caterpillars, thrips, leafhoppers, and other soft-bodied insects. Nymphs, too, are predators, and will feast both small insects and their eggs. With their dull brown coloring, damsel bugs blend in to their environment quite well. They look similar to assassin bugs, but are smaller. Pictured: A damsel bug.

Courtesy Debbie Hadley. Debbie has spent 15 years as a naturalist and teacher, sharing her passion for wildlife with others.
When getting ready to sow your garden, it’s important to understand the differences between available seeds:

**Hybrid Seeds** are produced by artificially cross-pollinating plants for the purpose of improving the characteristics of the new hybrid plant – i.e., better yield, greater uniformity, improved color, disease resistance, and so on.

**Pros:** Hybrid seeds are widely used in both industrialized agriculture and home gardens so they’re easy to find. They do, in fact, produce a high yield of uniform crops.

**Cons:** Hybrid seeds can’t be saved because the seed from the first generation of hybrid plants does not reliably produce true reproductions of the original plant. So new seeds must be bought every year, which can get expensive. There is also a homogeny of taste, which can get boring if you enjoy diversity (heirlooms offer more varieties and therefore more flavors).

**Heirloom Seeds** are open-pollinated, meaning they grow “true to type,” producing plants like the parents from seed. These are seeds that were commonly grown in bygone days (pre-dating the 1950s), but then fell out of favor as gardeners of the 1950s rushed to try the “new and improved” hybrid seeds. Because hybrid seeds were selected for their productivity, and their ability to withstand mechanical picking and cross-country shipping, rather than for their flavor, heirloom gardening can be seen as a reaction against this trend and a return to the old ways.

**Pros:** Heirloom seeds offer a much greater selection of plants from which to choose. They also contribute to increasing the available gene pool for a particular plant for future generations. Some gardeners choose heirloom plants because of an interest in history and/or traditional organic gardening. Some gardeners prefer them for their unique tastes. Typically, heirlooms have adapted over time to whatever climate and soil they’re grown in, so they are often resistant to local pests, diseases, and extremes of weather.

**Cons:** Some heirlooms may not be as hardy or disease resistant as hybrids. This will be noted in the seed catalog. If you stay away from those plants, there aren’t any cons for the backyard gardener.

**Open Pollinated Seeds** Simply put, open pollination (by insect, bird, wind, or other natural means) allows the same cultivar to be grown from seed for many generations. The seeds of open-pollinated plants will produce new generations of those plants (which hybrid seeds can’t do). All heirloom seeds are open pollinated.

**Pros:** Open pollination increases biodiversity and allows for ready saving of seeds. When you grow an open pollinated variety and save it for seed, you will get offspring that are similar to the parents. By hand picking the plants from which you wish to save seeds, you’re on your way to creating fabulous tasting plants that are specifically adapted to your growing conditions, knowing they’ll produce for you from generation to generation.
**Cons:** Because pollination is uncontrolled and the pollen source is unknown, open pollination results in plants that may vary widely in genetic traits and characteristics. This is easily remedied by planting similar species at a distance from each other.

**GMO Seeds** are not something you will likely encounter in your backyard organic garden, but a discussion of seeds would not be complete without mention of GMOs, which are particularly controversial. GMO seeds also directly relate to climate change, as drought-resistant GMO seeds are already being touted as an answer to global warming.

GMO stands for “genetically modified organism” because GMO seeds use recombinant DNA technology. Not surprisingly, the use of GMOs has sparked significant controversy. Some see this as dangerous meddling with biological processes that have naturally evolved over long periods of time. Others are concerned about the limitations of modern science to fully comprehend all of the potential negative ramifications of genetic manipulation. Some farmers find it very disconcerting that their bag of seeds is labeled hazardous and requires the use of rubber gloves to handle because of the pesticides spliced into the seeds.

If nothing else, GMOs are not natural. In the case of genetically modified Bt corn, its DNA is equipped with a gene from soil bacteria called Bt (Bacillus thuringiensis) that produces the Bt-toxin. It’s a pesticide; it breaks open the stomach of certain insects and kills them. When approved by the FDA, this Bt-toxin was not thought to survive in humans. But just this year, doctors at Sherbrooke University Hospital in Quebec found the corn’s Bt-toxin in the blood of pregnant women and their babies, as well as in non-pregnant women. Specifically, the toxin was identified in 93% of 30 pregnant women, 80% of umbilical blood in their babies, and 67% of 39 non-pregnant women. The study has been accepted for publication in the peer reviewed journal Reproductive Toxicology and has broad implications.

**Pros:** From an organic gardening perspective, there are no pros to using GMO seeds.

**Cons:** Non-GMO crops can be cross-pollinated from genetically altered plants from up to 13 miles away! This could be the beginning of a death-nell for biodiversity. To be fair to the other side, GMO proponents point out that outcrossing (as this process is known) happens with any new open-pollinated crop variety—newly introduced traits can potentially cross out into neighboring crop plants of the same species and, in some cases, to closely related wild relatives.

In a nutshell, hybrid seeds are great for the commercial and hobby gardeners who aren’t interested in saving seeds. Open-pollinated (including heirloom) seeds are preferred by the more serious gardeners who wish to become independent of other growers for his/her seeds and therefore food source. For the new gardener starting out, you really can’t go wrong with either hybrid or heirloom seeds.

**Recommended online sources for seeds**

- Fedco — [www.fedcoseeds.com](http://www.fedcoseeds.com)
- Baker Creek Heirloom Seeds — [http://rareseeds.com](http://rareseeds.com)
- Seeds of Change — [www.seedsofchange.com](http://www.seedsofchange.com)
- Good Seed Company — [www.goodseedsco.net](http://www.goodseedsco.net)
- Territorial Seed — [www.territorialseed.com](http://www.territorialseed.com)

*Special thanks to Karen Shanley, who is also a contributor of New Homesteading Magazine.*
Global warming has officially hit the garden. Seasoned gardeners have noticed changes for years – everything from an ability to plant earlier, to rains being a bit more severe, to periods of drought lasting a bit longer than usual. Well, now it’s official.

This year, the USDA released an updated version of their plant hardiness zone map for the first time in 22 years. The map accounts for recent warming trends and thus some zones have been adjusted northward. The new map, located on the USDA website, uses 30 years of weather data gathered from 1976 to 2005 and is more precise than the 1990 version, showing smaller areas and accounting for higher elevations and bodies of water that can influence temperature. Find it here:

http://1.usa.gov/gardenzones

When to PLANT YOUR GARDEN

Sow a Cool Harvest

Faith garden ideas for a cooler planet

A program of Interfaith Power & Light

CoolHarvest.org
Gracious God, you have given us much this day: the wheat and grapes which found our feast, the wit and will to transform them into bread and wine, and the precious presence of your Son who transfigures and redeems all that we have broken and lost. Send us out now to care for this fragile earth, our island home. Grant us the wit and the will to transform the toxic, irreverent ways we live, and the saving presence of your Son, Jesus Christ, who goes before us and calls us into this world you love. To him, to you, and to the Holy Spirit be honor and glory, now and forever, Amen.

St. Thomas Episcopal Church, Medina, WA

All creation belongs to You, God. Let us never consume in such a way to suggest that we deserve more than others. Rather, let us live our lives in clear acknowledgement that all You have created is intended to sustain all You have created. Cause this food to feed our determination to share more equally and live more justly. Amen.

Willard Metzger, World Vision

May the earth continue to live
May the heavens above continue to live
May the rains continue to dampen the land
May the wet forests continue to grow
Then the flowers shall bloom
And we people shall live again.

Hawaiian Prayer

Water flows from high in the mountains.
Water runs deep in the Earth.
Miraculously, water comes to us,
and sustains all life.
Water flows over these hands.
May I use them skillfully
To preserve our precious planet.

The Most Venerable Thích Nhất Hạnh

Almighty God, who are mother and father to us all,
Look upon your planet Earth divided:
Help us to know that we are all your children;
That all nations belong to one great family,
And all of our religions lead to you.
Multiply our prayers in every land
Until the whole Earth becomes your congregation,
United in your love.
Sustain our vision of a peaceful future
And give us strength to work unceasingly
To make that vision real. Amen.

David Brower, Environmentalist

We seek a renewed stirring of life for the earth. We plead that what we are capable of doing is not always what we ought to do. We urge that all people now determine that a wide untrammeled freedom shall remain to testify that this generation has love for the next. If we want to succeed in that, we might show, meanwhile, a little more love for this one, and for each other.

Nancy Newhall, Conservationist
Blessed is the spot, and the house
And the place, and the city,
And the heart and the mountain.
And the refuge, and the cave,
And the valley, and the land,
And the sea, and the island,
And the meadow where mention
Of God hath been made,
And his praise glorified.

Bahá’í Prayer by Bahá’u’lláh

O You, the almighty Sun, whose light clears away
all clouds,
We take refuge in You, king of all men, God of all
deities, Lord of all angels.
We pray You, dispel the mist of illusion from the
hearts of the nations and lift their lives by Your all-
sufficient power.
Pour upon them Your limitless love, Your ever-
shining light, Your everlasting life, Your heavenly
joy and Your perfect peace.

Hazrat Inayat Khan, Sufi Teacher

Blessed is the Source of Life, the fountain of Being
The wellspring of goodness, compassion and
kindness
From which we draw to make for justice and
peace.
From the creative power of Life we derive food
and harvest,
From the bounty of the earth and the yields of the
heavens
We are sustained and are able to sustain others.
All Life is hold, sacred,
Worthy of respect and dignity.
Let us give thanks for the power of heart
To sense the holy in the midst of the simple.
...We give thanks to Life.
May we never lose touch with the simple joy and
wonder of sharing a meal.

Rabbi Rami M. Shapiro
Regional Gardening Resources FROM THE IPL COMMUNITY

Georgia IPL
Dirt Wise: A Gardening Guide for Congregations (SE region)
http://www.gipl.org/Content/Dirt_Wise.asp

Greater Washington IPL
Congregational Community Gardens Network
http://gwipl.org/go-green/greater-washington-victory-gardens/

Illinois IPL/ Faith in Place

Oregon IPL / Ecumenical Ministries of Oregon
Food and Farms Program
http://www.emoregon.org/food_farms.php

Texas IPL / Texas Impact
Taste and See: A Justice Framework for Food and Faith
http://texasimpact.org/PDFs/TasteAndSee.pdf

Washington IPL / Earth Ministry
Food and Farming
http://earthministry.org/issues/food-farming
Other THINGS YOU CAN DO

Don’t have room or the volunteers to start a garden project? There are many other things your congregation can do to participate in the local, organic food movement. Here are some ideas to get you started.

Become the Hub of Community Supported Agriculture (CSA)

Over the last 20 years, Community Supported Agriculture (CSA) has become a popular way for consumers to buy local, seasonal food directly from a farmer. Here are the basics: a farmer offers a certain number of “shares” to the public. Typically the share consists of a box of vegetables, but other farm products may be included. Interested consumers purchase a share (aka a “membership” or a “subscription”) and in return receive a box (bag, basket) of seasonal produce each week throughout the farming season.

This arrangement creates several rewards for both the farmer and the consumer. In brief...

Advantages for farmers:
• Get to spend time marketing the food early in the year, before their 16 hour days in the field begin
• Receive payment early in the season, which helps with the farm’s cash flow
• Have an opportunity to get to know the people who eat the food they grow

Advantages for consumers:
• Eat ultra-fresh food, with all the flavor and vitamin benefits
• Get exposed to new vegetables and new ways of cooking
• Usually get to visit the farm at least once a season
• Find that kids typically favor food from “their” farm – even veggies they’ve never been known to eat
• Develop a relationship with the farmer who grows their food and learn more about how food is grown

It’s a simple enough idea, but its impact has been profound. Tens of thousands of families have joined CSAs, and in some areas of the country there is more demand than there are CSA farms to fill it. The government does not track CSAs, so there is no official count of how many CSAs there are in the U.S.

LocalHarvest.org has the most comprehensive directory of CSA farms, with over 4,000 listed in their grassroots database. Use the directory to locate a farm, and offer your congregation as a CSA hub for your members and surrounding community.
Promote or Host a Farmers’ Market

Farmers’ markets are one of the oldest forms of direct marketing by small farmers. From the traditional “mercados” in the Peruvian Andes to the unique street markets in Asia, growers all over the world gather weekly to sell their produce directly to the public. In the last decade they have become a favorite marketing method for many farmers throughout the United States, and a weekly ritual for many shoppers. In a farmers’ market, a group of farmers sell their products once or twice a week at a designated public place like a park or parking lot. Some farmers’ markets have live entertainment. Shopping at a farmers’ market is a great way to meet local farmers and get fresh, flavorful produce.

Use the map at LocalHarvest.org to locate farmers’ markets in your area, or to add one!

Collect and Use or Distribute Local Produce (Gleaning)

Gleaning is simply the act of collecting excess fresh foods from farms, gardens, farmers markets, grocers, restaurants, state/county fairs, or any other sources in order to provide it to those in need. The U.S. Department of Agriculture now has a very comprehensive Gleaning Toolkit Available.


Green Your Kitchen or Food Pantry

If your congregation is actively involved in a foods program, such as a soup kitchen or food pantry for the needy, review that program through your new “Cool Harvest“ glasses to see what can be done to improve its climate-friendliness. Simple things include: using your garden produce in your foods program, encouraging congregants to donate or “tithe” garden produce, start a healthy gleaning program as described above.
Advocate for a Healthy FARM BILL

Our chance to get this right!

Every few years, Congress passes a massive spending program called the Farm Bill. The tens of billions of dollars in subsidies and supports apportioned by this bill have a tremendous influence on the foods we eat, where they are grown, how much they cost, and the state of conservation in farm country. For decades the Farm Bill has been dominated by big AgriBusiness. Its narrow focus on factory farms, corn, cotton, wheat, rice, and soybeans has given us a high-carbon, processed food diet, produced by mega farms and mega feedlots. Things don’t have to be this way. Join the Interfaith Power & Light Cool Harvest program and we’ll provide you with educational materials keep you updated on opportunities to get involved. Sign up at coolharvest.org today!

1. Locate your senators and representative
   - www.senate.gov AND www.house.gov/writerep

2. Tell them you support a climate-friendly farm bill that includes
   - More funds for organic farming and grass pastured livestock operations
   - Programs that link farm families with new markets such as local schools, cafeterias, and community food projects
   - A Farmers Market Promotion Program
   - Full funding and endorsement of Country of Origin Labeling (to encourage consumers to buy local)
   - Full funding and expansion of conservation programs that protect waterways, habitats, and natural resources

3. Read
   - Diet for a Hot Planet, by Anna Lappé
   - Food Fight: A Citizen’s Guide to a Food and Farm Bill, by Daniel Imhoff

4. Watch
   - Nourish
   - Dirt
   - Fresh
   - Food Inc.

5. Follow
   - Environmental Working Group — ewg.org/agmag
   - Sustainable Agriculture Coalition — sustainableagriculturecoalition.org
   - Inside the Beltway — farmpolicy.com
   - Free Range Studio — foodbattle.org
   - Union of Concerned Scientists — ucsusa.org/food_and_agriculture
   - National Family Farm Coalition — nffc.net
   - Institute for Agriculture and Trade Policy — agobservatory.org
   - Community Food Security Coalition — foodsecurity.org
   - American Farmland Trust — farmland.org

Adapted with permission from Watershed Media / Daniel Imhoff’s Vote with Your Fork campaign.

A program of Interfaith Power & Light

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CoolHarvest.org
Dear Senator, LET’S PASS A HEALTHY FARM BILL

As people of faith, we want to see a Farm Bill that stewards Creation and promotes healthy food. This means:

- More funds for organic farming and grass pastured livestock operations
- Programs that link farm families with local schools, cafeterias, and community food projects
- A Farmers Market Promotion Program
- Full funding and endorsement of Country of Origin Labeling
- Expansion of farm-related conservation programs to protect waterways, the climate, and the environment

We will be watching. Please do the right thing for Health and Planet.

Please return to Interfaith Power & Light. Fax: 415-561-4892 or Mail: 220 Montgomery Street, Suite 450, San Francisco, CA 94104
We will keep you informed of upcoming opportunities, and we will gather these sheets, and send them together to your Senators for greater impact.

Title and Name  Email  City and State

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CoolHarvest FILM SCREENING

Dirt! The Movie is an insightful and timely film that tells the story of the glorious and unappreciated material beneath our feet. Inspired by William Bryant Logan’s acclaimed book Dirt: The Ecstatic Skin of the Earth, Dirt! The Movie takes a humorous and substantial look into the history and current state of the living organic matter that we come from and will later return to.

– Dirt! The Movie will make you want to get dirty!

Date: ______________________________________________________________

Time: ______________________________________________________________

Location: __________________________________________________________
_________________________________________________________________

Hosted by: _________________________________________________________

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A program of

Interfaith Power & Light
Dirt! The Movie DISCUSSION GUIDE FOR FAITH COMMUNITIES

1. How do most Americans react to the idea of children playing in dirt? Why do you think they react that way?

2. Several people in the film indicate that working in dirt is calming or satisfying. In your experience, is this true? If so, why?

3. What is your reaction to hearing about the number of farmer suicides in rural India over the past decade? (The film reports there were 200,000.) If such a thing occurred in this country, what do you think would happen?

4. Is it possible to reconcile food sovereignty and agribusiness? How can people retain and exercise their right to produce and control their own food resources in the face of market forces?

5. In the film, mycologist Paul Stamets characterizes the human species as a virus because of the harmful effects our activities have had on the land. Do you accept his analogy? Why or why not?

6. How can humans “listen to nature” and bring their needs and activities into alignment with those of nature? Are there ways you can be more attentive to the natural world in your daily life? How?

7. Keeping in mind the hummingbird story told in the film, do you think doing the best you can is enough to preserve the health of the planet, even if millions of people do their best? What responsibility do governments have to help maintain a healthy planet for future generations?

8. What about business and industry? What power do people have to get them to make changes that would be less harmful to nature while still meeting human needs?

9. What feelings are you left with after seeing this film? Do you feel motivated or empowered to make changes, either personally or as part of a group effort, to keep Earth’s soil healthy? What part(s) of the film especially resonated with you?
The mission of Interfaith Power & Light is to be faithful stewards of Creation by responding to global warming through the promotion of energy conservation, energy efficiency, and renewable energy. This campaign intends to protect the earth’s ecosystems, safeguard the health of all Creation, and ensure sufficient, sustainable energy for all.

www.interfaithpowerandlight.org