PRFCT EARTH PRJCT

The Perfect Earth Project promotes Nature-Based, Toxic-Free landcare practices for the health of people, their pets and the planet.

Earth Equity + Design for Freedom

LANDSCAPE TOOLKIT

Photo by: Alan Pollack-Morris

Introduction / Call to Action

The landscape profession holds a unique opportunity to take a leadership role in reducing the coming impacts of climate change and biodiversity loss. We are convening to discuss the options and ethics involved, and to join together to support one another in making a collective commitment to the earth: every practice, every project, from now on. It is our responsibility, it is something we can do.

Earth Equity is a call to action - it asks us to consider all life forms, and the systems that support them, as essential to the health of people and the future of the planet. Every decision and purchase, in every practice and project, should originate from a position of Earth Positive "do no harm." Landscapes provide an accessible and effective place to practice earth equity, which places a major opportunity, and responsibility, in the hands of landscape professionals. The earth is in our hands, we can make a major impact if we join together to make a collective commitment to earth equity.

The Basic Components of Earth Equitable Landscapes:

- Toxic/pesticide free practices protect workers and non-human life forms from exposure to harmful chemicals, and prevent pollution of soil, air and water.
- Circular biomass management and the reduction of power equipment based practices reduces fossil fuels, greenhouse gasses, air and noise pollution.
- Nature based designs restore biodiversity and promote human health
- Sustainably sourced, biodegradable, and forced-labor free materials ensure maximum ecological and human rights standards.

Earth Equitable Practices Protect All Life Forms and the Systems that Support Them

Human Lives
- Forced Labor and Child Labor free: Materials, furniture
- Exposure Free: noise and poisons

Non-Human Lives
- Pesticide Free
- Biodiversity Positive

Systems
- Water
- Air
- Soil
- Climate
- Biodiversity
- Culture

Earth Equitable Landscapes are Defined by Ethical Practices and Supported by Earth Positive Actions

Practices
- Education
- Design
- Implementation
- Care
- Engagement – dialogue

Actions
- Reduce Carbon
- Reduce Pollution
- Maximize Biodiversity
- Protect Ecosystems
- Design for Independence
- Incorporate Equity, Ethics, and Education
- Make and Communicate Your Commitment

This convening is a beginning; over time we will work together to compile information and create resources to support each of the following practices and actions. Please provide your input to help the Earth Equity ToolKit become fully functional, highly helpful, and increasingly inspirational.

Actions Detailed

Reduce Carbon/Greenhouse Gasses
As landscape designers/installers/caretakers we have the potential to not only limit our carbon emissions but also to design, install and maintain carbon positive landscapes.

- Limit practices that require trucking, transport and packaging
- Develop a metric that measures the combined energy use of the site (including electricity, gasoline, etc.). This can be used to help set targets for reducing energy consumption.
- Reduce energy consumption through the use of LED light fixtures
- Buy local
- Avoid purchase of foreign, packaged inputs
- Build soils with organic material from site
- Consider carbon costs of extensive regrading
- Maintain and manage biomass on site
    - Maintain and reuse biomass from initial site clearing
    - Create compost on site for mulching
    - Defer methane in landfills, leave grass clippings on lawns
- Limit use of mechanical equipment
    - Reduce Lawn areas/mowing
    - Reduce/eliminate leaf blowers, hedge trimmers, and weed wackers
- Use recycled materials
- Limit use of cement/concrete (concrete is responsible for 6-10% of global anthropogenic carbon dioxide (CO2) emissions)
- Whenever possible reduce reinforcement in concrete to reduce metal use
- Use steel from electric arc furnaces (which produce half as much carbon as other furnaces)
- Limit use of plastic (including recycled): geotechnical, irrigation, pots, packaging.
    - Consider non-plastic, sustainable alternatives
    - Avoid temporary drip irrigation
    - Employ Nature based solutions in lieu of manufactured for stormwater management
    - Eliminate the use of weed fabrics and other geotextiles
    - Reduce use of Geofoam as a lightweight fill material
    - Find alternatives for plastic drainage and soil strengthening systems
    - Explore alternatives and recycling opportunities for plastic grow pots
    - Explore alternatives for plastic green roof systems.
- Limit deforestation, use reclaimed wood
- Buy wood from local sources to limit transportation

Actions Detailed

Reduce Pollution—Poison, Noise, and Light
Chemical fertilizers and pesticides harm us, our pets, and the planet–yet we continue to expose ourselves and our ecosystems to them in pursuit of an artificial landscape ideal. Nature-Based designs do not need chemicals to thrive.

Landscape equipment is loud, produces excessive fumes, and creates lung damaging dust. It harms and alienates our land care workers. They are also harmful to insects and the soil biome. We can design landscapes and maintenance practices that are less reliant on mechanical means.

Typical Plant Health Care programs promote a cycle of dependency, not health. Fertilizers cause plants to push rapid, weak growth; they then become more susceptible to insects and fungus infections, which are in turn treated with insecticides and fungicides. The fertilizer-stimulated growth is removed with constant pruning, which is harmful to the plant, and the twigs and leaves are taken to the landfill where they produce climate warming gasses. The plant is then given more fertilizer to compensate for its loss and stimulate the plant to push more growth, which requires more pesticides and more pruning. And around it goes.

Excessive use of artificial light is damaging for both humans and wildlife. Designers have the opportunity to limit light pollution through thoughtful design and selection of fixtures.

- Allow natural systems to drive design decisions and aesthetics.
- Specify plants that are native and resilient...allow them to grow at their own rate, and support the wildlife that depends on them.
- Remove plants that require chemicals to thrive.
- Try not to buy any that have been grown with pesticides (especially neonicotinoids).
- Reduce the use of noisy equipment.
- Mulch Mow and leave clippings to feed lawns naturally
- Encourage clover in lawns for fixing nitrogen.
- Do not spray insecticides. Organic sprays are not target specific. Spraying for ticks, mosquitoes, etc is causing an extinction crisis in our firefly and bumblebee populations. There is no proof that tick spraying reduces the incidence of tick borne diseases. According to the health experts, the way to be safe is to spray yourself, check yourself.
- Make compost to replace purchased fertilizers.
- Water Smart, very seldom and very deep. This will help avoid stress-based fungus problems.
- Protect air quality during construction (SITES point)
- When installing lighting follow wildlife sensitive practices (reduce intensities and night-long) and follow Dark Sky principals (no uplighting)
- Do not attach lights to trees

Actions Detailed

Maximize Biodiversity and Ecosystem Services
Unlike carbon, it is hard to measure the impact of the biodiversity crisis. We know our lives depend on it, we don't know quite how much of what we can afford to lose. Unlike carbon, biodiversity is easy to see and appreciate.
We can see that we have fewer birds, 30% (3 billion) gone, fewer insects, 60% of species, including our beloved bumblebees and fireflies are facing extinction. We are continually developing natural places and replacing them with landscapes that have no place for nature.

- Design for habitat: food, shelter and water.
- Acquire an accurate site assessment and possible eco-assessment to help guide planting decisions.
- Consider designing for a charismatic fauna species (helping one species will most often help many) to help communicate design intent and focus the project on measurable outcomes.
- Identify any threatened or endangered species and create a plan to protect them. (SITES point)
- Specify 70% native plants to provide sufficient food and shelter for healthy bird and insect populations.
- Minimize lawn area, make it diverse (clover), and mow high.
- Consider specifying native plants that are resilient in the face of climate change.
- Consider specifying native plants for assisted migration.
- Design plant communities for wildlife/plant interactions and interdependencies, avoid monocultures.
- Submit a letter to potential nurseries asking them to track and disclose sustainable practices. (SITES point)
- Do not plant invasive species.
- Remove existing invasive species and develop a long term invasives species management plan. (SITES point)
- Leave dead trees (that do not pose a threat) and dead wood on trees and shrubs because they provide valuable habitat for insects and cavity nesting birds.
- Limit removal of existing plant material (except for invasives) and compost cuttings on site or nearby.
- Manage stormwater with bioswales and detention ponds that create habitat. (LEED/SITES point)
- Ensure protection of aquatic habitats through buffers. (SITES point)
- Do not specify endangered wood, or wood sourced from unethical practices. DO specify FSC Certified Wood and select plant materials from sustainable sources, in order to not draw down biodiversity in other areas.

Actions Detailed

Protect Ecosystems: Air, Water, and Soil
Consider the bigger picture from start to finish: the ecoregion, the watershed, soil and wind conditions; design with, not against them. Improve the health of the surroundings as well as the project itself.

- Avoid bare soil conditions, reduce wind and water erosion.
- Avoid developing steep slopes.
- Do not develop on prime, unique, or state/local important farmland (as defined by NRCS), or mitigate through the protect of agricultural conservation easements. (SITES point)
- Avoid fertilizer and pesticide runoff, organic products included.
- Manage storm water with plant filtration and natural recharge.
- Limit impervious surfaces and install permeable paving wherever possible.
- Ensure protection of aquatic habitats through buffers. (SITES point)
- Conserve water through specifying plants naturally adapted to soil and rainfall and consider using rainwater/stormwater catchment systems to supply water for irrigation.
- Design planting to be free of irrigation after establishment. (LEED/SITES point)
- Create a soil management plan: protect healthy soils from compaction and remediate damaged areas with minimal mechanical means.
- Designate Vegetation and Soil protection zones during construction. (SITES point)
- Maintain all organic materials to protect and ensure healthy biomes.
- Minimize damage to soil biomes with careful use of mulches (use plants instead whenever possible).

Actions Detailed

Design for Independence

Design landscapes that are right for the site and are not dependent on a myriad of landcare services. Restore places to ecological systems that require little care, no chemical inputs, minimal water, and are free to develop over time without suppression.

- Create a commitment with clear goals for designers, owners, and the maintenance team, communicate and verify sustainable construction practices with team.
  (SITES point)
- Educate design/install/maintain teams to share the goals, understand how to foster successful ecosystem function, and celebrate success.
- Specify materials for longevity that can be recycled, or composted on site.
- Design for minimal inputs: labor, mechanical, packaged, foreign matter.
- Design for maximal predator/prey balance.
- Specify the right plant, right place-for independence from chemicals, irrigation, pruning, clipping, and other damaging forms of suppression.
- Design with adequate spacing to allow plants to grow into their natural shapes.
- Mulch (cover bare soil) with plants, on site compost, and leaves.
- Incorporate a composting program to create a circular system and close the loop on biomass.

Actions Detailed

Incorporate Equity, Ethics, Education
Every decision, purchase, and practice should originate from a position of "do no harm". Our landscapes and gardens provide an easy and effective place to begin to practice earth equity.

- Make decisions regarding your landcare based on healing, not harming.
- Create habitat for humans and the more-than-humans.
- Purchase materials from companies that report annual environmental performance via the Global Reporting Initiative (GRI), or equivalent, including the Mining and Metals supplement, if applicable, or Provide a publicly available sustainability statement that discloses efforts to achieve sustainable practices. (SITES point)
- Submit a letter to all raw materials suppliers and/or materials manufacturers asking them to track and disclose sustainable extraction practices. (SITES point)
- Land Care workers are educated in the proper care and handling of living species and the importance of biodiversity and habitat. No life (plant or insect, etc) is taken without first being identified and its role understood.
- Land Care workers are not exposed to toxic inputs (pesticides), materials (preservatives or similar treatments), air or noise pollution (fossil fueled equipment).
- Pay Land Care workers a livable wage.
- Promote equitable site use. (SITES Point)

Commitments

Make and Keep Commitments

Earth Equity/Design for Freedom Project Checklist

- Make a clear commitment and establish goals
- Build Consensus: Educate and Engage design team, client, and all related parties in working together toward shared goals.
- Identify site ecoregion, watershed, proximity to protected areas, soils, historic flora and fauna, social context.
- Refine goals for project and regionally specific opportunities and challenges.
- Establish a team dedicated to informing and maintaining goals.
- Survey floral, faunal and soil biome populations to establish baselines.
- Prepare an invasives management plan.
- Prepare a soil and site protection plan.
- Hire for best maintenance practices (PRFCT Earth Maintenance RFP Template).

Ten Typical Commitments—Add your own. Exceed expectations.

- We will heal, not harm this place.
- We will respect the health and lives of those who work and play here.
- We will create a place that is habitat friendly and highly biodiverse.
- We will ensure that all inputs and materials are sustainably and equitably sourced.
- We will design for carbon positive- for today and forever.
- We will avoid the use of plastics and single use products.
- We will design for independence- landscapes that can largely take care of themselves.
- We will design to conserve and protect natural resources and systems.
- We will recognize that every cut is a wound and design for natural growth processes.
- We will train maintenance crews to kill nothing if they don't know its name.

Commitment Checklist

What can you commit to?

- Reduce Carbon
  - Reduce transportation of materials to/from site
  - Reduce lawn area
  - Reduce use of power tools
  - Leave grass clippings/other organic material on site
  - Reduce concrete
  - Source materials locally
  - Reduce use of plastic
  - Limit deforestation (both on site and via material supply)
  - Other:

- Reduce Pollution
  - Reduce pesticide use
  - Reduce herbicide use
  - Reduce fertilizer use by keeping organic material on site
  - Reduce noise pollution by limiting gas-powered tools
  - Do not spray for ticks
  - Plant properly
  - Other:

- Maximize Biodiversity and Ecosystem Services
  - Keep organic material on site to allow the ecosystem to function naturally
  - Leave dead trees standing
  - Protect as much native planting as possible
  - Consider the impact of climate change on plant selections
  - Acquire an accurate site-assessment
  - Create a soil management plan
  - Plant two-thirds native species
  - Do not plant invasive species
  - Remove invasive species
  - Only buy materials from sustainable sources
  - Minimize lawn area and allow it to grow to 3-4"
  - Protect threatened and endangered species
  - Create buffer plantings for aquatic habitats
  - Manage stormwater with habitat
  - Other:

- Protect Ecosystems
  - Reduce wind and water erosion.
  - Avoid steep slopes
  - Avoid fertilizer and pesticide runoff
  - Manage storm water on site
  - Conserve water
  - Create a soil management plan
  - Maintain all organic materials to protect and ensure healthy biomes.
  - Minimize damage to soil biomes with careful use of mulches (use plants instead whenever possible).
  - Designate Vegetation and Soil protection zones during construction
  - Do not develop on prime, unique, or state/local important farmland
  - Ensure protection of aquatic habitats through buffers
  - Manage stormwater with bioswales and detention ponds that create habitat
  - Design planting to be free of irrigation after establishment

- Incorporate Equity
  - Educated land care team
  - Do not expose land care workers to bad working conditions
  - Livable wage for land care workers
  - Understand source of materials and ethics/impacts of supplier
  - Other:

- Design for Independence
  - Design landscapes to be independent of unnecessary trimming/pruning/chemicals/irrigation
  - Create a clear commitment with the entire team
  - Right plant, right place
  - Create a long term management plan
  - Other:

Please add your suggestions for actions, materials, and resources.

Feedback

What did we miss?

What will be your biggest challenge in keeping and continually expanding your commitment?

What's working for you now that will be helpful for others to know about?

How can we keep enlarging our reach until we have engaged the entire landscape professional community?

How should we measure our success?

What would be most helpful for us to provide to support the Earth Equitable community?

Would you like to help and be a part of our team?

Comments/suggestions:

We would like to check back in a few months to see how you are doing. If you're interested in a personal response, provide your contact details below.

Name:

Company:

Email:

Phone:

Perfect Earth Project
www.perfectearthproject.org
info@perfectearthproject.org

Resources:

Sustainable Practices:
Two Thirds for the Birds
PRFCT Earth Project
The Basics of Nature Based Landcare (in English)
The Basics of Nature Based Landscape (in Spanish)
ASLA Water and Stormwater Management Resources
APLD Guidelines for Creating Environmentally Responsible Landscapes
APLD Guidelines for Lawns
APLD Guidelines for Sustainable Soils
PRFCT Earth Maintenance RFP Template

Plant Databases:
Pollinator Pathway
Audubon Native Plants Database
Native Plant Finder

Reducing Pesticides/Pollution:
Lawn and Garden Pesticides Facts and Figures
Cary Institute of Ecosystem Studies Tick Research
Quiet Communities
Dark Sky Association

Materials Resources:
Climate Positive Design
Carbon Smart Materials Palette
Design for Freedom Toolkit
Landscape Architecture Magazine Materials Section
Landscape Architecture Magazine Product Directory
APLD Report on Plastic Pots
Dripline Recycling

Organizations:
CT ASLA
NY ASLA
Landscape Architecture Magazine
Ecological Landscape Alliance
APLD
Sustainable SITES Initiative
USGBC

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