

## **Bona Terra Guiding Principles**

- I. We grow only plants that help restore our ecosystem
  - A. We grow only native plants
    1. Providing native plants in lieu of non-natives, cultivars, and invasive plants helps to support and restore our local ecosystems.
    2. Native plants are the best way to support biodiversity from the bottom of the food web (autotrophs) and extending all the way to carnivores (quaternary consumers)
    3. By only growing native plants, we have created a place where a consumer can purchase plants that will restore ecosystems without the possibility of inadvertently purchasing plants that may be detrimental to our ecosystems.
  - B. We are currently working on converting our entire inventory to local ecotypes by procuring wild and diverse local plant material in an ethical way
    1. We do not collect wild plant material and sell it directly to the consumer
    2. We prioritize seed collected within 100 miles of our nursery, but due to the need for wild genetics in the larger ecosystem, we do collect samples of near-natives from up to 200 miles from our nursery
    3. When we are unable to source local material we still buy seed from growers who provide wild genetics but we hope to eliminate this practice by 2029.
    4. We collect small amounts of wild plant material from multiple populations whenever possible.
    5. We collect samples from wild populations, limiting collecting to <5-10% of a colony at a time.
    6. Wild harvested plant material is taken back to the nursery where it is incorporated into our mother gardens. Stock/seed is generated from the mother garden beds.
      - a) We field grow wild plants to make seeds.
      - b) We use the seeds produced in our mother garden to grow plants available for sale
  - C. We infuse new plant material to create healthy and diverse ecosystems
    1. We continue to collect more wild plant material to infuse diversity into our mother gardens, repeating steps 1-5 listed above
    2. We limit the progeny of our “mother” plants to increase diversity
      - a) Clone runs are limited to 500 per parent-plant perennials and 200 per parent-plant for woody shrubs
      - b) We are working toward our goal to phase out cloning wherever possible
    3. We are working to convert our entire inventory to local ecotypes only. From 2017 to the present we have eliminated 99% of native cultivars from our stock and hope to sell off the remaining inventory in 2023.
  - D. We are intentionally excluding domesticated cultivars from our stock

1. Cultivars have been transformed into often unrecognizable forms compared to their original species.
    - a) Non-cultivated plants have a higher value to the ecosystem than domesticated plants that have genetically altered by humans
    - b) The driving force behind the creation of cultivars is for a plant's aesthetic qualities rather than the benefits to wildlife
    - c) Wildlife has difficulty recognizing cultivars in their environment, reducing their utility and benefit in the ecosystem.
    - d) *Ex: Putting a Chihuahua in the forest and expecting it to fill the niche of a wolf*
  2. Cultivars have lost most their genetic diversity in comparison to native species
    - a) Cultivars typically are made from clones and reduce diversity in the genotype in favor of producing desired phenotypic traits
    - b) Some cultivars are bred for sterility, and no longer produce necessary forage for wildlife or food for pollinators
    - c) Breeding for specific traits comes at a loss of coevolved features particular to their environment, the ramifications of which are often not apparent until much later
    - d) Advocates in favor of cultivars cherry-pick data to promote their practices, and without a complete dataset, this information is misleading at best and big-business propaganda at worst
- II. Emissions-reduction and sustainability is the lens through which all aspects of our business must be viewed
- A. We use intentional transportation-emissions reduction strategies and emphasis on local sales
    1. Our shipping policies emphasize local business and are in place to reduce emissions and ecosystem degradation.
      - a) No shipping out to customers
        - (1) We serve the Chesapeake ecoregion only
        - (2) Shipping requires excessive use of materials and fuel to move and we believe customers more than 100 miles away from us should find a grower closer to their location
      - b) No shipping soil or plants to the nursery
        - (1) We are working to no longer participate in the economy of strip mining peat bogs
          - (a) We are using locally sourced ingredients to make local soils
          - (b) We've come a long way towards removing peat from our soil mixes, but still have some more work to eliminate it.
        - (2) We do not ship in plants for resale due to high carbon costs and the danger of transporting invasive soil organisms.

2. We work with customers to find the best method of receipt with the lowest emissions
  - a) We limit sales within our part of the Chesapeake eco-region
  - b) Order pick-up is encouraged for small orders and directed to the closest location to the customer. We have multiple pick-up locations to help reduce emissions
    - (1) Our DC pick-up location allows us to serve urban customers with small orders without having to leave the city
    - (2) DC customers have access to our full inventory without having to travel to the nursery.
    - (3) We bundle deliveries with our commute, other orders, or tasks to reduce trips between the nursery and customer sites.
    - (4) Deliveries to DC sites are paired with our commuter vehicle and are never scheduled as a solo trip.
    - (5) Orders picked up at our DC location is a lower emission alternative for customers in the DC metro area
- B. We are working to craft our own soil solely from local materials
  1. Producing our local soil will reduce vehicle emissions significantly
    - a) We have stopped buying new peat and are working to use up our current stock so we can be peat-free by 2025
    - b) We do not ship in soil from other locations
  2. Producing our soil encourages local soil community diversity while preventing non-native bio organisms from entering our nursery system
    - a) By using our local soil, we do not move bio organisms that lack the ability to travel huge distances
    - b) We will grow our plants in local soil ecosystems and provide soil diversity for our customers
  3. We reuse local materials to create our own soil to reduce waste
    - a) Using organic manure from our farm as a soil component
    - b) Currently our largest ingredient for our soils are composted invasive plant from the property our nursery is on.
  4. We incorporate minimal fertilizer into our soil and no chemical fertilizer
    - a) We create and use compost tea made from household food waste and compostable waste from our farm to infuse our plants with local beneficial microorganisms
    - b) We use invasive fish species caught in the Patapsco River to create fertilizer.
      - i) We will not support the fish by-catch industry that denudes the world's oceans
      - ii) This method helps to eliminate emissions from transporting this type of fish fertilizer

- C. The native plants we provide to our customers are primarily chosen for their compatibility with stormwater capture, erosion prevention, and rewilding in urban settings.
  - D. We work to incorporate as many recycling materials into our nursery process as possible
    - 1. Our pot return program enables us to make use of existing resources that could otherwise end up in a landfill
      - a) We have not purchased new plastic pots since 2020, and with pot returns and recycling, we can continue to avoid contributing to the economy of new disposable plastic.
      - b) We incentivize return customers with product discounts to return pots for reuse in our nursery
    - 2. Our portable mill allows us to make use of salvaged logs
      - a) We offer lumber and wood slabs for sale
      - b) We convert wood scraps or donated logs into soil
    - 3. We incorporate other waste stream materials such as shredded paper and cardboard into our mulch and soil
  - E. Our nursery requires minimal electrical use
    - 1. The only electricity used at nursery is the water pump for irrigation
    - 2. We use an electric vehicle for moving plants and soil material
    - 3. We do not use a heated greenhouse
      - a) We have no need for electricity or gas for moderating temperature or lighting
      - b) Outdoor planting makes sure our plants are climatized and therefore ready to transplant as long as they are not frozen in their pots.
  - F. We do not use pesticides or herbicides in our nursery, and instead rely on natural predators and food webs to control pests
    - 1. We build habitats around the nursery to encourage natural predators and support natural food webs
      - a) We build nesting sites for insectivorous birds
      - b) We create habitats for predatory wasps and native bees
      - c) We keep caterpillars in place to feed predators and metamorphose into pollinating butterflies and moths
    - 2. We mechanically remove egg sacs of invasive insects in favor of native species (such as removing the ootheca of the invasive Chinese mantis in favor of native mantises)
    - 3. We mechanically remove invasive plants
      - a) We use cardboard layers to clear areas for new garden beds
      - b) We plant natives to replace invasive plants all around our nursery.
- III. We believe in the importance of environmental restoration through education
- A. We sell plants in varying sizes and packs to meet the needs of our customers and that are appropriate to each project

1. We have varying sizes and quantities of plants for both gardens and restoration projects
    - a) We sell larger sizes of grown-in plants for gardens and small spaces to establish quickly
    - b) We have plugs available for conservation and restoration projects and for growing plant colonies and communities over time
  2. We sell specialized plug-packs tailored for customers' needs.
    - a) We carry plug packs such as the Keystone Species Pack, the Pocket Prairie Pack, the Full Sun Power Plant Pack, the Autumnal Equinox Pollinator Pack, and the Shade/Part-Sun Pack
    - b) Allows homeowners to experiment with different plant communities to see which works best for their space
- B. We share actionable information about conservation and sustainability with individuals/homeowners
1. We share information both on digital platforms and in-person
    - a) We post on social media about a variety of topics, including sustainable garden maintenance, pollinator support, invasive plant and insect removal, etc.
    - b) We post articles about sustainable practices and wildlife support on the Resources page of our website
    - c) We host educational talks and visits to our nursery
    - d) We do quick, individual consultations by phone and at plant sale events
  2. We share easy, sustainable practices for your garden space
    - a) We share information about at-risk animal species for which there are not enough plants on the market to help support and sustain populations
    - b) We share healthy habitat and sustainable gardening practices
    - c) We aid customers in plant selection with species recommendations or plant substitutions
      - (1) We help to find the correct plant for the correct environment
      - (2) We aim to find a balance between aesthetic choices and plant benefits for healthy habitats
- IV. Our policies are adaptive: we respond to new information and are willing to change our policies
- A. We are rethinking environmental action by pivoting from traditional sales strategies
1. Our nursery species choices are guided by the recommendations of conservation and restoration research, and not by the consumer market
  2. Our inventory is shared online through our website for customers to peruse and send in their plant lists, and we sell retail plants for pick-up and delivery to local customers only

- a) Our system is set up to create relationships with customers and to educate them to find the correct plant for the correct environment
- b) We do not use the traditional retail sales practices of shipping plants in, using colorful, misleading labels, and creating systems for impulse buying.
  - (1) Printed materials, packaging, and shipping creates unnecessary waste for the sake of sales over environmental concerns.
  - (2) Our focus is on personally communicating with customers that need guidance for their purchases to ensure they are getting the best plant for their situation.