The Delaware Estuary is located in the Mid-Atlantic region of the United States, surrounded by portions of Pennsylvania, New Jersey and Delaware. An estuary is where fresh water from a river mixes with salt water from an ocean or bay. Estuaries are fragile ecosystems, which support some of the Earth’s richest and most productive habitats. The Delaware Estuary stretches approximately 134 miles, from the falls of the Delaware River between Trenton, New Jersey and Morrisville, Pennsylvania, south to the mouth of the Delaware Bay between Cape May, New Jersey and Cape Henlopen, Delaware. The impacts of daily landscaping decisions reach far beyond property lines. We can all make positive contributions to the habitats around us and to the fish and wildlife that they support by managing lands in more environmentally sensitive ways, whether they are corporate properties, school sites, or backyards. This is especially true for pesticides, fertilizers and other substances that we put on the land. These substances get washed into local creeks and streams when it rains, eventually ending up in the Delaware Estuary, negatively impacting water quality and living resources.

There are many ways to reduce the use of chemicals on landscaped areas. Just follow these conservation landscaping practices:

**Use native plants** - Native plants do not require as much water, pesticides or fertilizers because they have adapted over a long period of time to native conditions.

**Support beneficial animals** - Many creatures such as ladybugs, praying mantises, spiders, birds, and bats feed on the insects that are unwanted by most gardeners. Installing houses for ladybugs, bats and birds, or placing a birdbath in your garden are simple steps that you can take to increase habitat for these creatures.

**Use organic alternatives** - There are organic alternatives to most fertilizers and pesticides that are not harmful to beneficial organisms or to water quality. These can be found at local garden shops and on the internet.

**Test soil & recycle nutrients** – Top-dressing soil surfaces with a layer of mulch will reduce water loss, suppress weed growth, increase soil organic matter, and provide an environment for earthworms. This solution can go bad, so freeze any leftovers for use on another day.

**Blend 1-tablespoon baking soda and 1-tablespoon liquid soap into 1-gallon of water. Pour into a spray bottle and spray a coat of the mixture over the entire bark of a tree. Make sure the solution stays mixed as you are spraying.**

**Test soil and nutrient recycling**

**Top dress for success** - Top-dressing soil surfaces with a layer of mulch will reduce water loss, suppress weed growth, increase soil organic matter, and provide an environment for earthworms. Top dressing can consist of 2 to 4 inches of hardwood mulch or wood chips, 6 inches of dry leaves, or 2 inches of dry grass clippings.

**Use organic alternatives**

**Fruit Tree Dormant Oil Spray**


**Here are some non-toxic alternatives that you can use to take care of some of your landscaping challenges:**

**Weed Control Solution**

**Ingredients:** salt, liquid detergent and vinegar

**Combine 1-cup salt, 1-teaspoon liquid detergent, and 1-gallon vinegar in a bucket. After the mixture is thoroughly blended, spray onto weeds. This recipe is to be used for weeds growing in sidewalk cracks and between bricks – not in the garden. This solution can kill the beneficial plants in your landscaping.**

**For inside landscaped areas, your safest bet is to remove the weeds by hand when the soil is moist. Most soil allows for the plant and its roots to be pulled out more easily. To prevent weeds, before mulching, first put a couple of layers of newspaper down and then place the mulch on top. This will prevent weed seeds from sprouting.**

**Basic Bug Spray Recipe**

**Ingredients:** liquid soap and water

**Combine 1-tablespoon liquid soap and 1-gallon of water in a bucket and stir until blended. Fill a spray bottle with the mixture to spray infested areas. Always make sure to use liquid soap and not detergent. Detergents may kill your plants.**

**Basic Bug Spray with Repellent**

**Ingredients:** liquid soap, water, spices, and roots (garlic, onion, horseradish, ginger, rhubarb leaves, or cayenne pepper)

**To eradicate current infestations and to prevent future ones, add some of the strong smelling spices and roots, listed above, to repel those pests. Boil 1-quart water and pour into a Mason jar with a handful of the spices and roots. Make sure to screw on the top and let the mixture sit overnight. The next morning strain the mixture, mix in 1 to 2 tablespoons of liquid soap and spray on infested plants. The soap mixture will act as an insecticide and the spices and roots will repel the insects. This mixture can go bad, so freeze any leftovers for use on another day.**

**Snail Repellent Recipe**

**Bury a small bowl or metal can flush with the ground and fill it with beer to attract and trap snails.**

**Mildew Control Solution (for flowers and vegetables)**

**Ingredients:** baking soda, liquid soap and water

**Blend 1-tablespoon baking soda and 1-tablespoon liquid soap into 1-gallon of water. Pour into a spray bottle and spray on mildew.**

**Canada Goose Control**

**The most effective long-term and environmentally sensitive solution to controlling geese on your property is through landscaping. Geese prefer short manicured lawns and do not feel as comfortable feeding in areas where their view is obstructed by dense vegetation. By allowing grassy areas to return to a natural meadow state, growing 20-30 inches tall, geese will not be able to maneuver as well and will seek out a more suitable habitat elsewhere.**

**Sources:**

www.care2.com/channels/lifestyle/garden


Funding for this fact sheet was provided by U. S. EPA, Region II, in support of the Delaware Estuary Program. Special thanks to U. S. Fish & Wildlife Service and Natural Lands Trust.
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What is the Delaware Estuary?
The Delaware Estuary is located in the Mid-Atlantic region of the United States, surrounded by portions of Pennsylvania, New Jersey and Delaware. An estuary is where fresh water from a river mixes with salt water from an ocean or bay. Estuaries are fragile ecosystems, which support some of the Earth's richest and most productive habitats. The Delaware Estuary stretches approximately 134 miles, from the falls of the Delaware River between Trenton, New Jersey and Morrisville, Pennsylvania, east to the mouth of the Delaware Bay between Cape May, New Jersey and Cape Henlopen, Delaware.

What we put on the land ends up in our waterways.
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Test soil & recycle nutrients - Use a reliable soil test to determine your soil's nutrient status and what soil amendments are required. Composted organics are excellent sources of nutrients that will enhance soil texture, increase water-holding capacity, and decrease reliance on chemical fertilizers.

Top dress for success - Top-dressing soil surfaces with a layer of mulch will reduce water loss, suppress weed growth, increase soil organic matter, and provide an environment for earthworms. Top dressing can consist of 2 to 4 inches of hardwood mulch or wood chips, 6 inches of dry leaves, or 2 inches of dry grass clippings.


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**Fruit Tree Dormant Oil Spray**
Ingredients: vegetable oil, liquid soap and water

This solution can be used to suffocate overwintering pests such as mites and aphids on fruit trees and shrubs. Combine 2-tablespoons of liquid soap and 1-cup of vegetable oil and blend thoroughly. Add 1-gallon of water a little bit at a time, stirring as you go. Spray a coat of the mixture over the entire bark of a tree. Make sure the solution stays mixed as you are spraying.

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Sources:
www.udc2.org/channeled_lakeflye_gander

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