Conservation Landscaping Breakdown

Here are the seven ideas behind conservation landscaping. Follow the links for detailed information about each step, and local resources to help you understand what to do.

	**Planning and Design**	Examine the conditions present on the site, and arrange plants in a manner that takes advantage of those conditions. Think about the water, wind, sunlight, slope, and soil characteristics of all planting areas in your landscape. It usually hlps to sketch out a diagram and draw in which plants will go in what spots.
	**Plant Selection**	select plants that are properly suited for the conditions in their planting location
	**Limit Turf**	A turf lawn as we know it is one of the most environmentally-insensitive landscape treatments available. Think about turning the unused portions of your lawn into colorful flower beds that never have to be mowed. And where you do have lawn, be sure to plant the right type of grass, and maintain it properly to ensure it doesn't need extra water to saty healthy.
	**Soil**	Landscape experts agree- any landscape is only as good as the soil it is planted in. Keep in mind that your plants get everything they need, except sunlight, from the soil. Get your soil tested every few years, and aerate, fertilize, or amend as needed.
	**Efficient Irrigation**	Growing plants need water, so when irrigation is necessary some ways are more efficient with water than others. For instance, any water that falls on your driveway or sidewalk is wasted. Also, when water is released at the soil surface there is less opprurtunity for evaporation and overspray.
	**Mulch - Use it!**	The benefits of mulching your plantings are numerous. Mulch can insulate plant roots from excessive heat and cold, regulate the infiltration of rainwater, and limit weed growth. Then, when it decomposes, it adds valuable organic matter tot he soil.
	**Maintain the Landscape**	A landscape that receives regular attention to it's needs is a healthy landscape that needs less. Pruning, maintaining the mulch layer, weeding, and controlling pests are easy tasks, and keep your plants healthy with less water and less of your time.

Landscape Planning

Take the time to observe and map the existing conditions on your site that will effect plant growth and health. Plants that are installed in a well-planned landscape that considers the factors identified below will require less irrigation once established because they will be under less environmental stress. Also, a successful planting means you won't have to replace plants that don't survive, requiring more water to establish new plants. Use the following guide to map your site, so you know what to look for when shopping for plants.

Lay it Out	Find a piece of graph paper (download here) and some coloored pencils, and just sketch the basic layout of your property. Include your house, fencing, outbuildings, mature trees, yard, and other objects you will have to work around. The sketch doesn't have to be perfect, but should be generally to scale. Also, consider important features of adjacent properties like houses and large trees, for instance. Draw this information in with dark, heavy lines.
Climate	Write down on your layout sheet regional climate information that will effect plant selection and health. The key factor is our plant hardiness zone. Click here for a map of USDA plant hardiness zones. These zones are mapped according to regional temperature extremes during the growing season. You will want to make sure the plants you select are suited for our temeratures.
Sun	Generally speaking, plants need sunlight to grow and thrive. However, not all plants need the same amount, and some can actually be damaged by over-exposure. Click here for an explanation of the sunlight classifications. Mark on your diagram areas that receive very little (or no) sunlight, and areas that receive light for most of the day. Shade lightly with a dark color for the shady places, and with a light color for the sunny places. Make sure to add a North arrow to your map, so it is easy to see which areas will be exposed during the hottest times of the day.
Water	Everyone knows plants need water. Grouping plants according to their water needs, and placing your thirstiest plants near a water source make it easier to properly irrigate. Click here for some background on water needs in landscaping. Sketch on your layout areas where water tends to pond, using a light blue color. Using a color like orange, mark the areas that are always dry-perhaps upslope areas or areas exposed to full-day sun.
Wind	Mark on you plan areas that are excessively windy, as wind can cause excessive dryness and damage in plants. However, some plants can withstand heavy winds and can provide a barrier in your landscape. Click here for a list of windbreak trees. Click here for a list of plants especially vulnerable to wind.
Views	Observe your layout and mark areas with special views you want to be sure not to block with landscaping.
Other	Trees planted on the south and west sides of your house can provide shade in the summer, reducing cooling costs. Windbreaks on the North side of your house can protect from cold

Factors	winter winds, reducing heating costs.Also mark on your diagram plants that you want to preserve or relocate. Get to know your property and make plenty of notes on your plan.

Plant Selection

Using your landscape diagram as a reference, it's now time to select the plants you are going to install. Remember to consider the conditions identified on your diagram when selecting.

Native Plants	Native plants are already adapted to our local climate and soil conditions. The Maryland Native Plant Society maintains a listing of native plants for each region in Maryland. The US Fish and Wildlife Service also has a thorough listing available here. Some background on native plants in Maryland can be found here, and a listing of sources for native Maryland plants can be foundhere. Learn More: Maryland Cooperative Extension Native Plants guide <(pdf) Maryland Native Plant Society homepage Rare and Endangered Native Plants (MD Dept of Natural Resources)
Drought-Tolerant Plants	Drought-tolerant plants are ones that are especially adapted to dry conditions, and should not require supplemental watering during the dry summer months in Maryland. Click here to view a list of drought-tolerant annuals compiled by the Maryland Cooperative Extension service
Plants to Avoid	Exotic and invasive plants are harmful to your landscape in many ways. Quite often they spread rapidly, and consume resources and space needed by other plants. You should avoid planting these species, and remove them if they are present in your landscape. Background on invasive and exotic species found in Maryland is available here, and a listing of such plants is found here.
Local Garden Centers	Click here for a partial listing of local garden centers and nurseries.

Limited Turf

Carroll County residents spend millions of dollars, and many hours every summer keeping their lawns green. But how much of that lawn do you use? Are you spending all of that time and money wisely? Perhaps there are portions of your property now covered by grass, which you could plant in decorative, low-maintenance flower beds. A bed planted in native species, properly mulched and maintained, will require significantly less time and money to keep healthy, than the same area covered in grass. Keep some grass, for visual variety, play areas, and areas that may not be suitable for other plants. Where you do have turf grass in your landscape, do it right with the information on this page, and linked from this page.

Variety Selection	Select a variety or mixture of grass seed that is appropriate for the conditions on your site. Here is a brief recommendation list: For **drought tolerance**: tall fecue, red fescue, Kentucky blue **Heat tolerance**: bentgrass, perennial rye, red fescue **Cold Tolerance**: Kentucky blue, bentgrass, perennial ry, red fescue **Compacted soil**: tall fescue, Kentucky blue, perennial rye, red fescue **Wear tolerance**: tall fescue, perennial rye, Kentucky blue, red fescue **Shade tolerance**: "Rebel" tall fescue, "A-34" Kentucky Blue, "Reliant" hard fescue, "Jamestown" chewings fescue Additional drought-tolerant species include Zoysiagrass and bermudagrass. More information on turf species selection can be found at Gardening Guru, or here.
Maintenance	1. Maintain drainage - eliminate areas where ponding occurs by regrading that area or redirecting the water. 2. Maintain air flow and sunlight 3. Maintain organic matter - leave no more than 2" of thatch to decompose into the soil 4. Relieve compaction - aerate soil every couple of years 5. Establish and maintain a fertilizing schedule using organic fertilizer 6. Mow only when needed, never removing more than 1/3 of the grass height 7. Mow according to the propoer height for your species (never less than 2 1/2") 8. Water infrequently and thoroughly - most lawns need only 1" water per week (inlcudes rain) 9. Allow the grass to go dormant when excessive dry weather occurs

Soil Composition

It's worth repeating- ***A landscape is only as good as the soil it's planted in***. your soil's ability to provide what your plants need, in terms of nutrients, root structure, and water is the biggest factor int he health of your landscape. To determine the health of your soil, you will need to send a sample to a soil testing lab. A listing of regional testing labs is available here.
Here's a list of what plants will need from your soil, how to get it, and what it looks like if your plants don't get the amount they need:

Water	The texture of your soil will determine how much water it can hold for your plants. IF your plants can't get the water they need they will wilt, and eventually die. Finer textured soils drain slowly and have more plant-available water, but they are susceptible to ponding. Coarser textured soils have less plant-available water. Click here to see a general soils map to see what type of soil you have. To learn more about soil texture, click here.
Macronutrients	Soil has to be able to provide three main nutrients to your plants: Nitrogen, Phophorus, and Potassium (N-P-K). IF any one of those nutrients is deficient, your plants, including grass, will not be healthy. Fertilizers will add these nutrients to your soil, but you must be cautious not to over fertilize! If estabiched parts of your plants are turning yellow, or growth appears to be stunted, you may have either a deficiency, or over abundance of these nutrients. Click here or more information on fertilization techniques, and here for more information on symptoms of a macronutrient deficiency.
Micronutrients	In addition to N-P-K, plants need other nutrients from your soil. These include calcium, magnesium, and sulfur, as well as minerals such as iron, boron, copper, zinc, and molybdenum. A deficiency in one of these nutrients is more difficult to diagnose and treat, but the good news is, most soils in our area have enough already. Click here for more information on these nutrients.
Organic Matter	Adding organic matter is the best way to improve the health of your soil. Organic matter is decmposing, or decomposed material from once-living organisms- tree bark, wood chips, compost, manure, grass clippings... As this organic material breaks down, it adds valuable nutrients, and structure to the soil. It also increases the soils' ability to hold water for plants. Add organic matter to your soil by using mulch, or incorporating manure, compost, or finely-textured yard waste when preparing your planting areas. For an in-depth look at organic matter and it's importance in your soil, click here.
Structure	Mark on you plan areas that are excessively windy, as wind can cause excessive dryness and damage in plants. However, some plants can withstand heavy winds and can provide a barrier in your landscape. Click here for a list of windbreak trees.
pH	Soil pH affects the availability of nutrients, especially calcium, which is important for

	macronutrient uptake. Click here to learn more about soil pH. Most soils become more acidic over time. The most common way to correct that, is to incorporate limestone dust (lime). Click here to find out more about correcting your soil pH.

Irrigation

So you know that your landscape is going to need water to grow and stay healthy. But how do you water it, while conserving water?

Rainwater Harvesting	Use a rain barrel or two to store water from you guteer downspouts. This water would ordinarily end up in the street or in the patch of grass right at the end of your downspout. With a rain barrel, you can store that water for use where you really need it. Learn more about how rainwater harvesting works here.
Direct Application	Apply water directly at the soil and root zone, where plants need it most. With this method, water goes only where it is needed. Examples includedrip irrigation, and bubblers. Learn more.
Avoid overspray	Water that falls on impervious surfaces, like driveways and sidewalks, is wasted water that still costs the consumer as much as the water that falls on plants. This water usually ends up in the street, or evaporating on the surface.
Water early	Early morning, between sunrise and 9am, is the best time to water. Evaporation is lowest, and there is less risk of disease from water on plant leaves sitting overnight. Plants will also have water readily available to them during the heat of the afternoon.
Prioritize	Position you most sensitive plants where they are easy to water, and water them first. Know which of your plants can survive dry periods, and which ones go dormant when stressed. Dormant plants will normally recover once the stress subsides.
Timing	Don't water your landscape when mother nature has already provided enough. In general, if you have received at least one inch of rain in a week, you don't need to water. IF you have an automatic system, make sure it has a rain sensor so it doesn't come on when not needed.