TreePeople

sustainablesolutions
growing a greener city

january 2011 · water budget · out-of-the-box · plant of the month · workshops

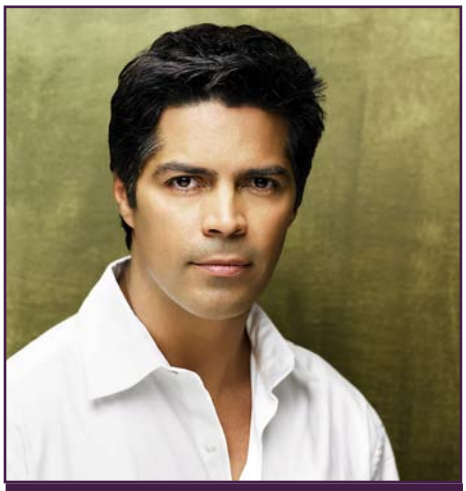
How Much Water Do You Need?

It's time to make good all those New Year's resolutions! It may seem a bit counter-intuitive to consider conserving water when it's rained so much lately, but we are still in a drought situation. Climate-appropriate plants are much easier to establish when planted during the winter, making this a perfect time to reduce water use.

Here are some interesting facts to help motivate you to create a water budget:

- From the Water Encyclopedia: A person needs a minimum of 13.2 gallons per day for drinking, sanitation and hygiene.
- The Los Angeles Department of Water and Power reports an average of 126.5 gallons of daily water use per capita for 2009.
- According to the Metropolitan Water District, roughly 60-70% of potable water (our drinking water) is used on landscapes.
- From locally based, G3 (Green Gardens Group): by conservative estimates, a 1,000-square-foot lawn with a typical irrigation system will use 25,000 gallons of water per year. Replace it with low-water plants and you're down to 6,000 gallons. An annual savings of 19,000 gallons!

Creating a water budget and selecting climate-appropriate plants can have a positive effect on the amount of water we use. Calculating how much water is needed does involve some math, so put on your thinking caps, grab a calculator and have some holiday cookies handy!



"I like to describe myself as an **actorvist**. *I combine art and activism to build bridges between communities. Environmental stewardship has been a passion of mine for many years. Conserving water is vital here in Los Angeles where it is such a precious commodity. Sustainability means that we have got to think of actions that will help us reduce our water consumption."*

- Esai Morales, Actor

Resolution: Create a Water Budget

1. **How is water measured?**
   Pull out your water bill. You'll see the current usage is a relatively small number 36, 48, 52… something like that. These water units are not in gallons, but in hundred cubic feet (HCF, or CCF). One HCF equals 748 gallons. So if your bill charges you for 48 HCF in a 60 day period, your average daily use is 598 gallons. (48HCF x 748 gallons / 60 days = 598 gallons per day)

2. **How low can you go?**
   Many households use 60-70% of water outdoors. If you suspect your home is in this category, multiply the number you reached in step one by .35 to get an idea of what your new water bill would look like.

3. **Evapotranspiration-What?**
   Evapotranspiration rates may be something you last heard about in high school, so here's a refresher course. Evapotranspiration (or ET) is the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues).

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TreePeople's Sustainable Solutions Program is dedicated to landscape transformation - turning yards into functional landscapes that are beautiful and sustainable. Our monthly guides and checklists detail an easy, step-by-step process, helping us all create a healthy urban forest where water is valued, air is clean, soil is healthy and trees are thriving.

Next Month: Permeable Pavement

Linda's List

Linda Eremita, TreePeople's Senior ISA Certified Arborist, has the following suggestions for your January gardening fun:

Climate Appropriate Plant of the Month

Manzanita (*Arctostaphylos*)

There are many native species and cultivars of manzanita to suit most landscapes – from ground covers (*A. uva-ursi* 'Point Reyes') to tall shrubs (*A. glauca* – bigberry manzanita) that grow 12' to 15' tall. These evergreens need a well-drained soil, and like it on the dry side, but some can take clay soils and a little supplemental water. They are known for their white to pink bell-shaped flowers in winter and red, smooth, sometimes peeling bark. Now is the best time to choose one!

Upcoming Workshop

February 12, 2011 - Community Sustainability Workshop Visit www.treepeople.org

Photo by brewbooks

Out-of-the-Box

Free Money!

Need a little extra cash? Well, thanks to a great collaboration between the City of Los Angeles, TreePeople and LADWP, new parkway landscaping guidelines give you an option of 20 drought tolerant turf substitutes and native groundcovers to plant in your parkway without needing a permit.

Earlier this year, the City of Los Angeles contacted TreePeople to help create the new parkway plant list. We excitedly took on this project in the interest of helping residents of Los Angeles make their landscapes more sustainable without having to pay expensive permitting fees.

Before this list was created, any parkway plants other than turf required a permit that cost upwards of $500. Now, choose one of these 20 plants, and no permit is needed. And, if you are a City of Los Angeles resident and customer of LADWP, the Residential Turf Removal Program will pay $1 per square foot of grass removed from your property - parkway included.

What is your parkway, you might ask? It's that strip of grass between the roadside curb and the sidewalk. For guidelines and more information about LADWP's Cash for Grass program, go to www.treepeople.org and get some green for going green!

4. **But why does all this matter?**
Understanding the evapotranspiration rate of your neighborhood and the water needs of the plants you prefer helps you make wise choices.

ETo is the "reference evapotraspiration" for a specific region. Generally speaking, the higher the ETo, the more water is needed to keep plants alive. For Los Angeles the ETo ranges mostly from about 46-55. For information about your yard, check out the map at http://www.cimis.water.ca.gov/cimis/images/etomap.jpg.

Additionally, each plant has its own needs and thus its own ET plant factor. Lush lawns and tropical plants have high water needs and have an ET plant factor of 80-100% (that's 80 to 100% of the ET for that cool season grass in the ETo). Plants more suited to Mediterranean climates, like Los Angeles, use water sparingly and have low ET rates, often around 20-30%. Because we experience dry, hot summers, plants with high ET rates require even more water than they would in wetter, cooler climates.

5. **So, how can I really know how much water I am saving?**
Calculate the square footage of your yard using the equation below. You'll need to know the ETo of your area (step 4) and the ET plant factor. The latter can be found at WUCOLS (Water Use Classification of Landscape Species). http://www.water.ca.gov/wateruseefficiency/docs/wucols00.pdf. Plants are listed by their scientific name (starting on page 63) and by region (the L.A. Basin/coast are region 3 and the Valley is region 4.) The plant factors (PF) are listed as H (high .7-.9), M (moderate .4-.6), L (low .1-.3) and VL (very low <.1).

6. **But what does this all really mean?**
Most of us use far more water than we need, and much of it is to sustain landscapes that are not suited to our climate. Green lawns and tropical landscapes start looking much less attractive when we learn to see the true beauty of native and climate-appropriate plants.

Make a resolution to create a sustainable landscape that's the envy of the town!

Water Use Equation For Your Yard

Square Footage x Plant Factor x ETo x .62 = Gallons Needed Annually.
So, for a 1,200 square-foot yard…

- Traditional turf: 1,200 x .9 x 50 x .62 = 33,480 gallons per year
- Climate-appropriate plants: 1200 x .25 x 50 x .62 = 9,300 gallons per year

An annual water savings of 24,180 gallons. You can also take baby steps. Use this equation to figure out water savings for converting half or a quarter of your yard.