

How much rainwater can you rescue from your roof ?

Rainwater Rescue is essential to green living, and every day we read more local press about the need to rescue and reuse our rainwater.

To work out how much rainwater can be captured from your roof area we have a simple calculation:

$$\text{Roof area (in sq ft)} \times \text{amount of rainfall (in inches per month)} \times 623 / 1,000 \times 0.7$$

This will show you how much water you can rescue from your roof or to put it another way, how much water you are losing down your drain each rainfall! The 0.7 represents the efficiency of the roof in capturing the rain - depending on the angle and material of your roof, and the intensity of your rainfall, a certain amount of water bounces off - replenishing the natural water table. Evaporation is another factor - check out the example below to learn more.

By way of example, if you live in North Carolina, you have a 2,200 square foot roof and you get approximately 48 inches of rain during a year (or 4 inches on average per month). You would then take the roof area (2,200 square feet) and multiply it by 4 (amount of rainfall in inches per month). You would take the result of this calculation, multiply it by 623 then divide by 1,000 to give you the total amount of water that you could capture from your roof on average each month. We would suggest you factor in evaporation which can be done by reducing your answer by 8% (i.e. by multiplying your answer by .92) which is appropriate for a desert type environment.

2,200 sq ft x 623 /1,000 equals 1,370 gallons of water for every inch of rain. Using an efficiency of 70% (actually depends on slope of roof etc), then the real collection would be 959 gallons per inch.

If we average the 52 inches over 12 months (simplified version) for say 4 inches per month average, and multiply this figure by the 959 gallons calculated above, then you can harvest 3,835 gallons of rainwater on average per month.

But there is no point rescuing rainwater just for the sake of it - you need to know what you will use the rainwater for. In Australia there were many examples of homeowners installing huge tanks ...which then sat, full and stagnating for months because they were not connected to irrigation systems. So, now that you know how much rainwater is at your disposal, work backwards to answer the following questions:

- what is your landscaped area
- what type of plants do you have
- do you use drip irrigation, sprinklers or a hose
- do you know the average evapotranspiration for the type of plants in your particular climate.

A single HOG can drip irrigate between 4 to 14 square feet of landscape for six months - making 50 gallons of rainwater go a long, long way. So you do not need to harvest all of your monthly rainwater in order to irrigate. Just take what you need for irrigation, and potentially still have extra left for fire fighting or washing cars. Remember, the average American uses 100 gallons of water per day for household use including lawn care so if you used the rescued rainwater for everything, you would still would only need 3,000 gallons per month.

Don't forget, Rainwater HOGs are potable plastic, so your HOGs can also function as an emergency backup water supply.

The best news? Rainwater HOGs are modular which means you can start with 6 - 12 HOGs for landscape use, test the waters, and then add more HOGs (say for toilet flush) when you are ready.

Please let me know if you have any questions on the above and I will continue to keep you abreast of water saving and HOG developments.

Regards
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