



Rainwater Harvesting 101: Maintaining a Rainwater Harvesting System

A well-designed rainwater harvesting system should be easy to use and low maintenance. However, low maintenance does not mean no maintenance and routine maintenance of a rainwater harvesting system is needed to preserve proper system functioning. A lack of maintenance can lead to poor water quality, decreased water supply, mosquito infestation, and water damage to structures. This fact sheet presents a basic maintenance plan for any rainwater harvesting system with a storage tank. The maintenance plan starts from the collection surface (rooftop) and works through the entire system and includes a suggested frequency for each maintenance task. This task list can also be used to identify the source of a problem in a rainwater harvesting system.

1) Check the condition of the roof. Inspect the roof looking for algae growth, debris build-up and deteriorating roof materials. In addition, look for vegetation that overhangs the roof. If any of these problems are found, they should be fixed. This inspection should be done yearly and after large storm events and can be conducted from the ground.



Overhanging vegetation, as seen on the left, can lead to debris in the gutters which will reduce the flow of water to the rainwater storage tank and decrease the quality of the harvested rainwater.

2) Inspect gutters and downspouts and clean periodically. Debris in the gutters and downspout will both decrease the water supply from the rainwater harvesting system and lead to poor water quality. Gutters and downspouts should be inspected (and cleaned if necessary) twice per year and after large storm events.



An example of pre-tank filtration that will need to be cleaned after every rainfall event.

3) Clean and inspect the pre-tank filter. The cleaning frequency required for a pre-tank filter varies widely, with some filters requiring cleaning after every rainfall event and some filters requiring cleaning only twice per year. Clean and inspect the filter in accordance with the manufacturer's guidelines, but not less than twice per year. If the filter appears very dirty at every cleaning, increase the cleaning frequency.

4) Inspect the storage tank. Check all of the inlets and outlets that are aboveground to be sure there are no gaps and any openings are screened. Check around the tank for excess water which might indicate a leak. Look at the overflow pipe from the tank and be sure it is not blocked by debris or causing excessive erosion. For a belowground



tank, check around the tank lid to be sure that surface debris and runoff cannot enter the tank. Do not enter the storage tank. Fix any problems found during this inspection immediately. This task should be completed yearly.

5) Check the water distribution piping and pump (if applicable). Look around the distribution piping for any indications of a leak. Check the backflow prevention device if one is installed in the system. If the pump has automatic run-dry protection, check the operation of this system. This task should be completed yearly with the exception of checking the backflow prevention device which should be checked every 3-5 years in accordance with local requirements.

6) Inspect the final water treatment system and replace parts as needed (if applicable). If the



rainwater harvesting system is being used indoors, additional water treatment after the storage tank is recommended. This treatment can include sediment filters, carbon filters,

ultraviolet lights, and more. This equipment should

Need more information? Contact the ARCSA Foundation: <https://www.arcsa.org/page/Foundation>

be checked and consumable parts, such as filter cartridges and ultraviolet light bulbs, should be replaced according to the manufacturer's guidelines. At a minimum, these tasks should be completed once every three months. In addition, if the water is used for potable uses (drinking, cooking, bathing, handwashing, etc.) the water quality should be tested by a certified lab annually. To find a certified lab, go to <https://www.epa.gov/dwlabcert/contact-information-certification-programs-and-certified-laboratories-drinking-water>.

The maintenance guidelines in this fact sheet address many of the most common problems found in rainwater harvesting systems but do not address every possible issue. For more information, you can purchase a copy of the ARCSA rainwater harvesting manual or a copy of the ARCSA/ASSE/ANSI system design standards at <https://www.arcsa.org/store/ListProducts.aspx?catid=265505&ftr=>. Anyone considering a rainwater harvesting system is also encouraged to consult an



ARCSA/ASSE certified professional.