

Solar Water Distillation

This playbook details the step-by-step process of constructing and using a solar still to collect and purify water. It harnesses the sun's energy to evaporate water, leaving contaminants behind, and then condenses it to obtain clean water.

Step 1: **Materials Gathering**

Collect all the necessary materials, including transparent plastic sheeting, a container to catch water, a digging tool, rocks or weights, a drinking tube, and sealant.

Step 2: **Site Selection**

Choose a sunny location with access to dirty or salty water. Ensure the site is clear of shadows and has maximum sun exposure throughout the day.

Step 3: **Digging**

Dig a bowl-shaped hole in the ground about 3 feet across and 2 feet deep, which will serve as the foundation of your solar still.

Step 4: **Container Placement**

Place the clean container in the center of the hole to collect the distilled water.

Step 5: **Input Water**

Pour the dirty or salty water around the outside of the collection container, but not so much that it contaminates the container's rim.

Step 6: **Cover Hole**

Cover the hole with your transparent plastic sheeting, ensuring it's sealed around the edges with rocks or weights and any sealant if necessary.

Step 7: **Condensation Setup**

Place a small rock or weight in the center of the plastic sheeting, just above the collection container, to create a low point where the condensed water can drip into the container.

Step 8: **Tubing**

Insert a drinking tube if you have one, ensuring one end goes below the plastic and into the catch container while the other end remains outside so you can drink without dismantling the still.

Step 9: **Monitor**

Allow the sun to heat the still so that water evaporates, condenses on the underside of the plastic, and drips into the container. Make sure to monitor and collect the clean water regularly.

General Notes

Site Safety

Be aware of local wildlife and insects when choosing a site to avoid any disturbances to the solar still.

Water Quality

While solar distillation removes most contaminants, it may not remove all volatile organic compounds. Additional purification may be necessary for some water sources.

Maintenance

Check the integrity of the plastic sheeting and the seal around the solar still periodically and repair any damage to ensure optimal operation.