Rain Drops Keep falling on my Head...

It may seem odd that in an island county surrounded by the ocean we seem to be perennially short of water. In the rain shadow of Vancouver Island we have a rainfall that typically ranges between 18 and 28 inches per annum - half that of mainland western Washington. We also have dry summers with mild, wet winters.

These factors combine to cause water shortages and low aquifer recharge rates - ranging from approximately 1.5 inches to 2.5 inches per annum. Add to that there is salt water intrusion into many wells, especially on Lopez island and close to the shoreline of the other islands. All of these factors mean that we have to think very carefully about how we use our water.

A good place to start is with water conservation. (Waste not, want not seems especially relevant.) Inside the house you can start with simple measures such as not leaving the tap running while cleaning your teeth, then progress to installing water efficient dishwashers and washing machines, low-flow toilets, and low-flow shower heads. Recirculating pumps prevent water from being wasted while waiting for hot water to flow from the faucets.

Outside the house you should consider native plants which will need much less water in summer, and try not to water your lawn. Where you do need to water use a drip-feed system that delivers small quantities of water right to the roots, rather than spraying large quantities of water, most of which will evaporate before reaching the roots. I use the scarcity of water to excuse the fact that I never wash my truck.

Rainwater collection is one way to collect high quality water, even if you have a well. Most people who install a catchment system do so because they have no other viable source of water. But there are other reasons to install a system:

Security against the failure of your well, for example due to saltwater intrusion.

Reduced need for well pumping to reduce power requirements if you are off-grid, or to assist a low producing well.

Clean, air temperature water for your garden. Well water is very cold by the time it reaches the surface and can cause thermal shock to your plants and vegetables.

It's a good source of water for fire protection.

Systems are very simple: essentially rainwater is diverted from your downspout through one or more filters before being deposited into a storage tank. Modern tanks are available in fiberglass, galvanized metal and plastic. Large concrete cisterns can also be cast in place. If you are going to drink the water it will need to pass through a series of filters, usually culminating with an ultraviolet filter that will kill any bacteria that may be present (which can be washed from the roof from bird droppings). For garden watering you may only need a simple filter to prevent clogging of your drip irrigation system.

You should not collect rainwater from a roof that has shakes or shingles that have been treated with preservatives, or from asbestos-cement roofs. Wooden roofs will often contain large amounts of organic matter (such as lichens and moss) that will need filtering out of the water before it enters your tank. If you don't have a suitable roof on your house you can always use a barn, storage shed or garage for catchment.

A thorough but easy to read guide to rainwater collection is 'Rainwater Collection for the Mechanically Challenged' by Suzy Banks and

Richard Heinichen ($19.95 US). I'm designing my own system at the moment and expect to be able to install 2,500 gallons of storage for about $2,500 not including labor. I'll only be using mine for emergency backup and vegetable watering so there will be no carbon or ultraviolet filtration.

My barn roof (which is corrugated metal) should yield about 27,500 gallons of water per annum - ten times more than I am intending to store (and dealing with the excess is another problem). Mike Durland at PurRain in Deer Harbor (www.purrain.com) is an excellent local source of information and components.

Finally a brief note about water rights. Washington state 'owns' all the water that falls on its lands and manages this through a system of water rights. There is a general exemption that if you take less than 5,000 gallons of water per day from a well you do not need a water right. (This may seem high but it was set to allow for agriculture as well.)

Rainwater collection in Washington requires a water right but over the past few years the Department of Ecology (who regulate most water issues) have turned a 'blind eye' to rainwater collection in San Juan County. So although there have been quite a few intrepid homeowners who have built rainwater collection systems, they have always been technically illegal.

The good news is that an agreement is being reached that will make rainwater collection a legal option in the county although large systems will require a permit. This agreement should come into effect in late 2007/early 2008.

This article was written by Steve Hussey, a Natural Resources Planner with the San Juan Islands Conservation District.