

OUR ENVIRONMENT OUR HERITAGE



THE HYDROLOGICAL CYCLE



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Hydrology is the study of water, particularly its movement throughout the earth.

The hydrological cycle describes this movement. Beginning with precipitation (water falling from the atmosphere) and ending with evaporation (water returning to the atmosphere), the fascinating journey of a single water droplet ranges all over the surface and subsurface of the earth.

When water first reaching the earth from precipitation, it either:

- (i) stays on the surface (surface water); or
- (ii) infiltrates into the ground (groundwater); depending on the relatively permeability of the ground.

Surface water runs off as overland flow until it either gets:

- (a) intercepted by vegetation;
- (b) stored in a depression (puddle, pond or lake);
- (c) reaches a stream which discharges to the ocean; or
- (d) eventually infiltrates into the ground.

Groundwater travels more slowly than surface water, and moves either in the horizontal direction (interflow) or vertical direction (percolation), depending on the geology and the relative permeability of the material.

Underground water either:

- (a) gets intercepted by vegetative roots;
- (b) is stored in an aquifer;
- (c) reaches a stream which discharges to the ocean; or
- (d) eventually infiltrates into the water table.

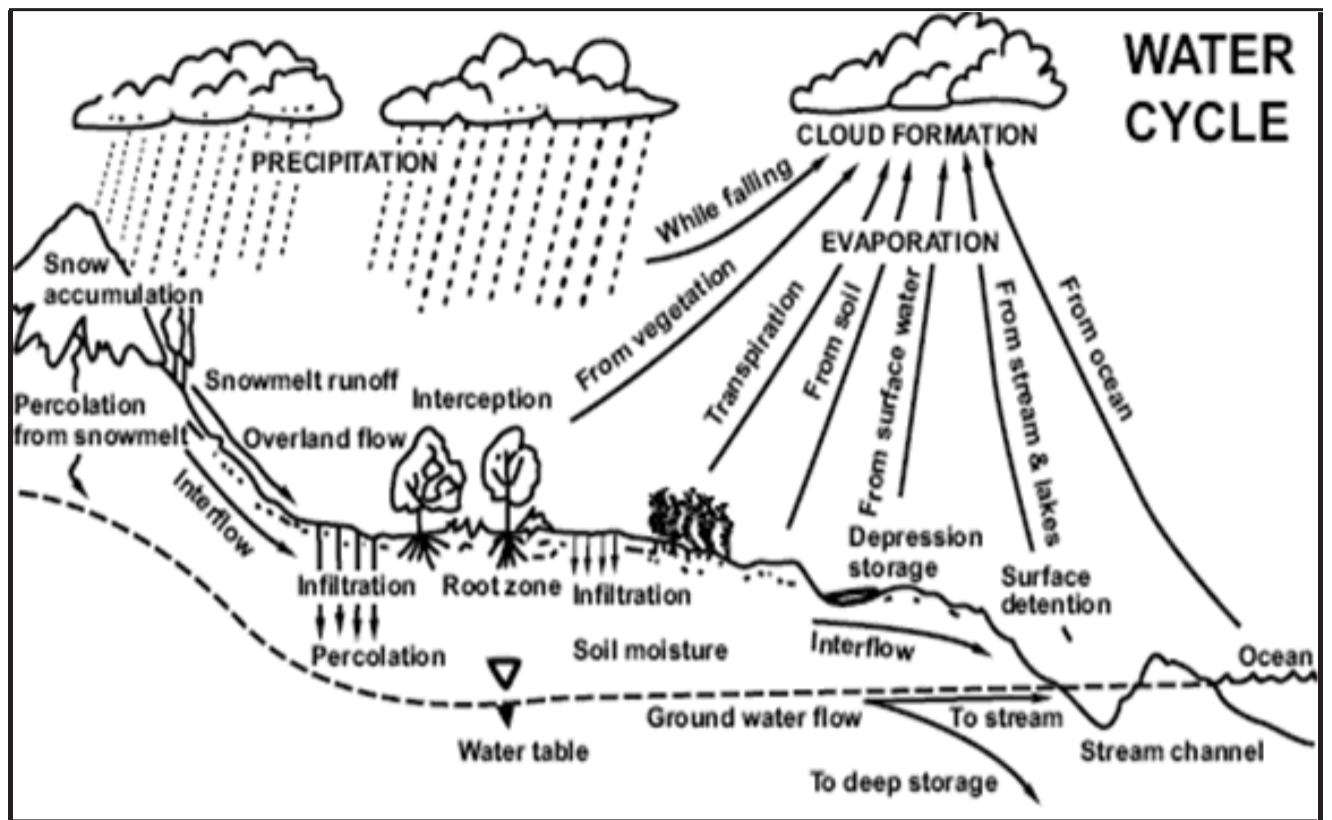


Figure 1: The Hydrological Cycle

HUMAN INFLUENCES

Humans engage with water at many stages along this journey.

For the water used for drinking and household uses, supplies in Samoa are either collected for rainwater harvesting (rooftops and water tanks), taken from surface water streams, pumped up from the underground water table, or extracted from springs (interflow that is exposed at the ground surface).

While these sources are often considered separately, they are in fact all related.

If water is extracted from both surface water and groundwater sources within the same catchment, the overall volume taken is cumulative.

Therefore, it is important to understand all the various uses of water within a catchment to determine whether the overall extracted amount is sustainable.

In Samoa, we are blessed with high rainfall, so there is often a large amount of water available for human consumption.

However, in areas of high population density, high water use or low rainfall, the available supply may not always be so readily available.

It is at this point that hydrologists (scientists who study hydrology) are particularly needed. Since water is all around us and is essential for life, it is important that we better understand the limits of this vital resource.



Figure 2: Surface Water Intakes

WHAT WE CAN DO.....

All of us interact with water at some stage during our daily lives, whether it be drinking water from the tap or from a bottle, taking a shower, washing our clothes or going for a swim. Our routine lifestyles should reflect the fact that fresh water is a precious resource that needs to be used wisely and protected from contamination. Therefore, we need to be careful not to waste this valuable natural resource and also to care for the environment from which it comes.

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Children's Corner



CONGRATULATIONS!!!!

To our TOP TEN winners - "2008 Young Environmentalist Stars" - Please contact our office DBS building - Level 3 - telephone number 23800 for more information.

1. Fritz Krause
2. Palepua Solaese
3. Faith Crawley
4. Allenor Levy
5. Victoria Pauga
6. Martin Lui Yuen
7. Malaea Schuster
8. Angel Mala
9. Anastasia Carruthers
10. Edith Faolotoi

CONGRATULATIONS!!

Top Five - Consolation winners
- call our office telephone number 23800 for more information.

1. Ebony Taavili
2. Noeda Chan Boon
3. Mara Nansen
4. Saouila Tolovaa
5. Crystal Umar

Please be advised
that we will hold our "2008
Young Environmentalists Stars" Prize-
Giving on Friday, 13th February 2009 -
at the DBS building - Level 3



MERRY
CHRISTMAS
AND A BLESSED
2009!!!

From: CEO,
Management and
Staff of MNRE

ACKNOWLEDGEMENTS

We wish to acknowledge and thank the following companies for sponsoring our children's corner prizes

● STRICKLAND BROS

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