ENV101 EARTH SYSTEMS

Practical Exercise 9 Surface/Subsurface water

1. OVERVIEW

Today's practical session focuses on a few questions relating to surface and subsurface water.

1.1. Learning Outcomes

After completing this practical, students will be able to:

1. Describe the hydrologic cycle;
2. Understand flood recurrence intervals and the means to map flood hazard zones; and
3. Discuss the importance of groundwater, how and why it exists, and means of extraction.

1.2. Preparation

Ensure that you have access to the internet and a copy of the prescribed textbook.

2. SURFACE AND SUBSURFACE WATER

Background information:

- Read Chapter 5 in your textbook – 'Water on and Under the Ground'
- View the following video (around 30 minutes in length): http://www.environment.gov.au/water/publications/agriculture/video-great-artesian-basin.html
- Explore the following website: http://www.lrm.nt.gov.au/water

Q1. Describe the Hydrologic cycle, paying attention to the links between the hydrosphere and earth's other major sub-systems.

Q2. What is meant by a ‘flood recurrence interval’? Is it possible to have two 100-year floods occur in consecutive years? Why or why not?

Q3. How do you think flood hazard maps are derived? What type of data would you use to construct such a map?

Q4. What is the Great Artesian Basin? Why is it important to Australia?

Q5. What are some of the threats associated with sustainable groundwater supply? How and why do these occur?

Q6. Describe some of the ways in which ground water can return to the surface