ACTIVITY FOUR: WALKING IN A WETLAND WITH DAVID

This SOCIAL SCIENCES: GEOGRAPHY lesson takes learners on walk through a wetland and a river, looking for good and bad land management practices.

Historically, wetlands have been regarded as unproductive and even unhealthy wastelands. Although an understanding of the value of wetlands and wetland conservation has grown in recent years, some people continue to convert natural wetlands to intensive agricultural land or fill them with soil and rubble to provide space for industrial, urban and tourist expansion.

Each group will need the following equipment:

- A copy of 'David's Wetland Walkabout' (see end of this pack)
- 2 different coloured highlighter pens per group
- Articles on flood reduction and streamflow regulation (see end of this activity)
- Enviro fact sheet on Wetlands (at the end of Activity Two)

WHAT TO DO?

1. Divide the class into groups of 5 or 6 learners.

2. Give each group the equipment listed above.

3. The groups are to follow these instructions:

   Using the highlighter pens, mark the following:

   - Areas where good management of the land around the river will help prevent flooding *(teacher, there is a wetland checklist for you to use if necessary at the end of this activity).*

   - Areas where bad land management could lead to flooding *(teacher there is a wetland checklist for you to use if necessary at the end of this activity)*.

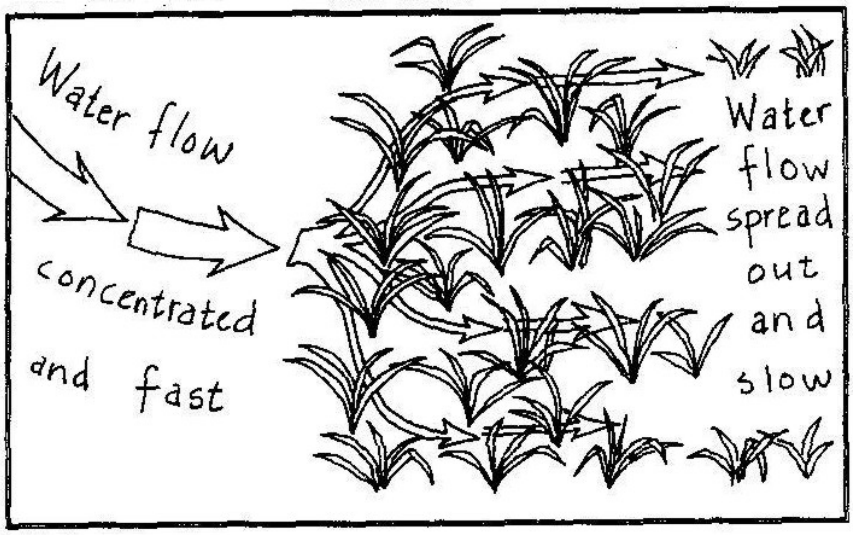
   - Using the information gathered, each learner is to write a letter to the Mayor of Bokkiesburg, warning him/her of the potential flooding hazard in the town. Include some suggestions for good land management. *This letter could be included in the learner's portfolio.*

Flood reduction and streamflow regulation

Wetlands spread out and slow down water moving through the catchment because:

1. The characteristically gentle slopes of the wetlands and,
2. The resistance offered by the dense wetland vegetation.

Also many wetlands do not have well-defined channels that would otherwise speed up the movement of water.



By slowing down the movement of water and detaining it for a while, wetlands act as sponges which reduce floods and also prolong streamflow during low flow periods. Loss of water to the atmosphere through evaporation and transpiration does, however, reduce the amount of water available to prolong low flows. When wetland vegetation is growing, water is lost from the leaves through transpiration. However, the water lost into the atmosphere from a vegetated wetland is usually less than would be lost from the surface of an open water area such as a dam. This is because the cover provided by wetland vegetation reduces evaporation from saturated or flooded soil by sheltering it against the sun and wind. When the vegetation dies back, there is no loss of water through transpiration and the dead leaves remain, continuing to shelter the soil. During such times, water loss is most effectively regulated.

WETLAND CHECKLIST

Harmful actions / Poor land management	Good actions / Good land management
Toilets, rubbish, cattle and erosion polluting a water supply.	A water source protected by a fence, and water being piped to a storage dam for community use.
Alien trees planted in a mountain valley catchment.	A permaculture farm (growing several crops) which has natural vegetation between the fields and the river
Farmer draining and ploughing a wetland.	A restored catchment (start of a river) where rocks and plants prevent soil erosion, and people can picnic and enjoy nature.
Four places where housing and farming practices have removed natural plants from the river's edge and caused erosion.	
Farmer John who uses too much fertiliser. Water run-off from his land causes algal bloom in the dam.	
Farmer Brown spraying pesticide too close to the river. This kills water animals.	
A dry river bed because of a dam. All the river animals and plants have died.	
A wetland being filled with rubble for housing development.	
Bokkiesburg factories, and litter polluting the river.	
A narrow bridge causing erosion of the river banks.	
A mangrove swamp that has been drained, and houses built too close to the river mouth.	

Criteria to assess learners during this social sciences: geography lesson

Criteria	Exceeded requirements of the Learning Outcome	Satisfied requirements of the Learning Outcome	Partially satisfied requirements of the Learning Outcome	Not satisfied requirements of the Learning Outcome
The learner was able to identify good land management practices from 'David's Wetland Walkabout'				
The learner was able to identify bad land management practices from 'David's Wetland Walkabout'				
The learner wrote a letter, warning of the flood potential to the town and was able to offer suggestions of good/better land management practices				