Life & Death of the Billabong

Q1a) What is a billabong?

A billabong is a body of still water that exists separate from the main body of water that is running. They are remaining remnants of a river once floodwaters have resided.

Q1b) In what ways are billabong numbers declining?

Billabong numbers are declining because they are drying up, being drained or getting filled in by bulldozers for development. Some are even being abused by being used as private rubbish dumps. They are also being drained because of irrigation and the construction of dams and weirs.

Q2) Why is Dr. Terry Hillman convinced that the ecosystems of flood plains are more important than the river itself?

The ecosystems of flood plains are the major food and life providers for the main rivers. These fringe waters teem with life, because the stable and wide variety of habitat is ideal for making their home, as a result there is a vast food chain available. As this cradle of life gets constantly cut off from the main stream, the life of the flowing rivers diminish. The flood plains also filter out sediments and trap nutrients which cleanses the water and ecosystem.

Q3) How is the interdependence of billabong and river illustrated by the decline in Murray cod?

A significant reason why the Murray cod has diminished is because the young cod have been starved of the abundant microscopic food sources available in the billabong. Floods played the part of linking these food providers to the main river to enable the cod to spawn in these areas. Now young cod are left in the nutrient diminished main stream, fighting for their survival.

Q4) According to Dr. Hillman the way life operates in Australia is in response to unpredictability.

a) what examples does he cite? **b) How do billabongs reflect this?**

The Australian environment and life cycles are shaped, renewed and maintained by unpredictability. Our landscape, fauna and flora are unusual compared to the typical European habitat. The predictable timing of man upsets the perfect unpredictable timing of God; and where no evident logical order is apparent, there is an order working far beyond what the minds of men can comprehend. These complex, uncertain systems have a detailed depth far beyond our short-sighted environmental understanding. The billabong reflects this concealed complexity; what seems a stagnant, lifeless muddy pool is actually a life thriving, life giving resource for the clearer running waters. In our blindness we are destroying life and bringing death because our eyes deceive us into thinking otherwise. Dr Hillman reflects this view with these quotes

> The billabong, less picture-postcard than a rainforest, perhaps, but biologically infinitely richer and more imposing in its effects on the wider landscape, we have done little or nothing … By attempting to impose certainty on an uncertain environment, predictability on systems shaped by unpredictability, by forcing European characteristics on an antipodean world, we have instead brought death on an unparalleled scale.

Q5) Bacteria, phytoplankton and zooplankton play vital roles in the biodiversity of billabongs

Explain the role of each in biodiversity.

Phytoplankton is essentially the green and brown algae that clings to sunken logs or floats around in water. It is the first link in the food chain that converts sunlight to food and energy. Billabongs along the Murray contain an amazing variety of algae which represents a photosynthetic powerhouse to fuel the millions of microscopic creatures known as zooplankton. These minute creatures range in size between 6 microns to 6mm and provide the primary food source for insects and fish fry which in turn feed larger life like "birds, fish, frogs and reptiles." Bacteria process and break down dead plant matter, they are decomposers of organic matter.

Q6) Three major effects are attributed to the loss of billabongs. What are they?

Billabongs rely on the rise and fall of floodwaters for survival. Plains that previously flooded naturally have dried up because the water now gets diverted and controlled by man made development and technology. Dams have been constructed and irrigation drains a lot of water out of the river. A number of man made factors have disrupted these natural systems along the Murray. Farmers use them as a water source for their livestock and they subsequently dry up; become polluted with animal faeces and deteriorate. "A great number have been filled in or drained to make agricultural land." This has diminished the diversity of species and brought about an overall reduction in water quality.

Q7) Explain why a billabong is described as "an ever-changing engine driving the biology of our river systems, which cleanses their waters and renews life from the most microscopic to the largest forms of birds, animals, plants and trees."

The flood plains, where the billabong resides naturally captures and filters out sediments and toxins. When these plains are prevented from flooding all of these unwanted materials have nowhere to be naturally absorbed by self-balancing ecological systems, they remain in the main river system, continually compounding as they go along. The process of floodwaters rising and receding has been paralleled with a natural toilet flushing system, which cleanses and renews the ecological world.