FT2 - Lake Parramatta

- Hunts Creek catchment, North Parramatta
- UBD Map 191 D9
- Kiosk, toilets, shelters
- Problems with domestic ducks interbreeding with native species and weed invasion
- 500 m walking loop
- Vision: Swimmable by 2005

Site Information

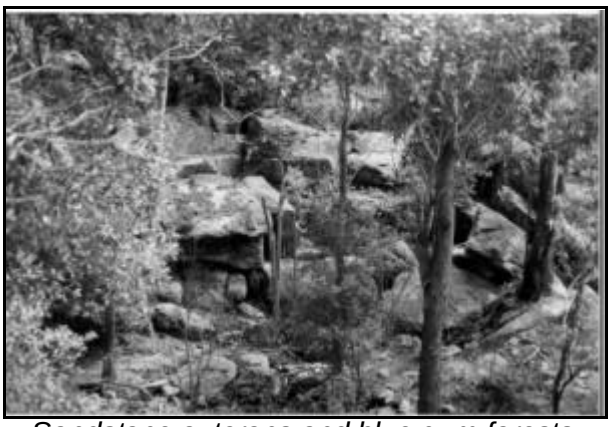
Lake Parramatta is a 10 hectare reserve. The catchment area for the Lake is bounded by North Rocks Rd, Pennant Hills Rd and Hunts Creek. The dam wall is of arch sandstone construction, engineered so that the weight of the water keeps keystones in place. It was constructed in 1856 to provide a supply of freshwater for Parramatta. When Parramatta was connected to the metropolitan water supply in 1890, the Lake became a popular swimming spot. Declining water quality in the Lake has prevented its use for swimming since the 1960's. Today the Lake and surrounding bushland are used for recreational activities such as picnics, walking and canoeing. There is a 500m walking loop around the long ridge top.

Domestic ducks threaten biodiversity and Pollute the lake

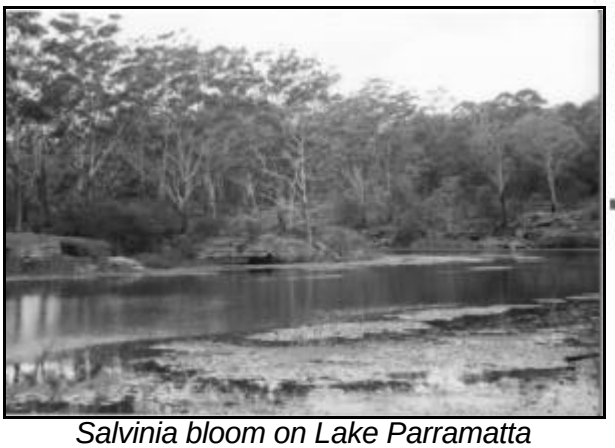
Lake Parramatta dam wall

Environmental Management

Water quality in the lake is threatened by stormwater pollution (oil, leaves, litter, sediment, nutrients, chemicals and pesticides) sewerage overflows and leaks and contaminated sediment. Recurring *Salvinia* blooms affect biodiversity and tourism. The dumping of domestic ducks at the Lake has resulted in problems with faecal coliform contamination of the water. These domestic ducks also damage natural biodiversity by interbreeding with native species.



Sandstone outcrops and blue gum forests



Salvinia bloom on Lake Parramatta

The "Swim 2005" program is being implemented by the Trust and Parramatta City Council to educate the community about their impacts on water quality. The Lake Parramatta Water Quality Management Plan has been developed by the Trust and identifies the mechanisms for making the Lake swimmable again.

Geologically, the Lake is located on the margins of shale and sandstone formations, with a resulting variation in vegetation communities. Vegetation communities present at the site include sandstone blue-gum forests, iron bark, Cumberland Plain Woodland vegetation communities and some coastal species such as *Banksia serrata.*

Parramatta Council has a bush regeneration program underway in weed-affected areas of the reserve. Residents along North Rocks Road have established a community group that is regenerating bushland that backs onto the Lake at the rear of their homes.

Site Walk

1. Start the walk at the Dam wall. Note the sandstone outcrops, native bushland. What birds can you hear/see? What other sounds can you hear? Note the close proximity of the main road. Can you see any other animals such as lizards? How might this area have looked before the dam wall construction? Why would this site have been chosen for the construction of the lake? Give at least two reasons.

2. Walk to the constructed wetlands. This was once the main area that people used for swimming. Why would the wetlands have been constructed here? Note the stormwater pipe that flows into the edge of the wetlands. How does a wetland work? What contaminants may be in the water? Name two and their possible origins. Note the sediment build up near stormwater entrance. How could this area be improved both in terms of its effectiveness and aesthetic value?

3. Walk along the lake away from the dam wall. Note the number of introduced ducks and their droppings. What impact could these ducks have on the local biodiversity? How could the duck droppings affect the water quality in the lake? Note the 'No Swimming' sign near the wetlands. This site could potentially be tested for faecal coliform bacteria.

4. Continue walking along the lake. Toilets are available near the BBQ area. Note the native regeneration work that has been carried out here. How does it look compared to the grassed area where the ducks are? Count the number of species present here and compare to the grassed area in front of the shop.

5. Walk onto the pedestrian access track. Looking over the lake, how might this area have looked prior to the dam? This is Sydney Sandstone Gully Forest. Compare the grass and weed species on left of the track to native vegetation on the left. Note the invasive nature of the weed species.

6. Follow the marker on the left of the track to walk closer to the lake. Caution as this area may be slippery. Ensure students stay to the track so as not to adversely effect the vegetation. Students may wish to listen for birds/lizards/snakes and note the numbers as they walk.

7. Track opens out to rock ledges. Compare the view toward the car park to that upstream.

8. Continuing on the track, a small creek enters from the right. Where would this water have come from? What might it have brought with it? Name two possible pollutants. Note weeds such as lantana that line the creek. Why would the weeds be here?

9. As track continues, note the change in the understorey from grasses to small trees and shrubs. Why would this change occur? Note the change in smell. What does that make you think of? Does the vegetation look healthier here? Why?

10. Second tributary. Note the difference in the vegetation and health of the creek. Present is moss, ferns, birdcalls, clean water. Why would this creek be different? Could this have been hoe the creek would have been before the dam?

11. As track opens out, not the change in ground from sandstone to shale.

12. Turn around and on the way back take the high track. Note the difference in areas such as vegetation, temperature, smell. What could be done to improve this area? What is already being done? What could you do?

Site Activities

- Catchment walk,
- Water quality testing,
- Habitat assessment,
- Transects, quadrats
- Mapping
- Weed identification
- Bush regeneration