**Supplementary Material Table 1. Monitoring activities before and after remediation work.**

|  |  |  |
| --- | --- | --- |
| **Sampling Date** | **Key results** | **Reference** |
| 1992/93 | Assessment prior to decommissioning found heavy metal, nutrient and organic (including fuel) contaminants in soils at the station site. | Sheppard et al 1993 |
| 1994/95 | Elevated heavy metal concentrations found in Greywater Gully (Table1). No detectable contamination the lake. | Hawes and Howard-Williams 1996 |
| 1995/96 | Low nutrient and metal concentrations in the lake. No difference between Vanda Bay and Control site. High concentrations found in Greywater Gully | Hawes and Howard-Williams 1996 |
| 1996/97 | Low nutrient and metal concentrations in the lake. No difference between Vanda Bay and Control site.  Hydrocarbons, elevated heavy metal concentrations and phosphorus contamination of soils  Experiments on soils and mat growth | Hawes et al 1997  Webster et al., 2003.  Hawes et al. 1999 |
| 1997/98 | Low nutrient and metal concentrations in the lake. No difference between Vanda Bay and Control site | Schwarz et al. 1998 |
| 1998/99 | Low nutrient and metal concentrations in the lake. No difference between Vanda Bay and Control site | Sutherland et al. (1999 |
| 1999/2000 | High ammonia detected in Vanda Bay and Control site | Sutherland and Hawes 2000 |
| 2000/01 | Inter-annual variations in both Vanda and Control bays attributed to slowly declining water level. | Sutherland 2001 |
| 2001/02 | High Nitrate detected in Vanda Bay and Control side due to very high inflows from Onyx River (> 5 m3/s). | Sutherland 2002 |
| 2014/15 | No detectable contamination of lake water, but detectable nutrient and organic carbon contamination in the sediments. Hydrocarbons remaining in soils close to lake water level. Well-developed microbial mats overlying sediments in newly flooded area, with a significantly different microbial composition in Greywater Gully than controls. | Taylor MSc Thesis, 2015  Taylor et al., 2015 |
| 2022-23 | Observations showed that the station site was completely flooded, but no samples were taken | Authors’ personal observations |

**Supplementary Material Table 2. Monitoring results from 1994 to 2002**

**Table 2A.** Water column and benthic mat-associated nutrients.

DRP – dissolved reactive phosphorus, NH4-N -ammoniacal nitrogen, NO3-N - nitrate+nitrite nitrogen, DOP/DON – dissolved organic phosphorus/nitrogen, Chla – chlorophyll-a, PN/PP – particular nitrogen/phosphorus.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Nutrients in water (mg m-3)** | | | | | **Chlorophyll-a, N & P in benthic mat (μg cm-2)** | | |
| **Season** | Timing | DRP | NH4-N | NO3-N | DOP | DON | Chla | PN | PP |
| **Vanda Bay** |  |  |  |  |  |  |  |  |  |
| **94-95** | Dec 1994 | 0.5 | 5.1 | 11 | <1 | 52 |  |  |  |
| **94-95** | Jan 1995 | 0.3 | 6.5 | 10.7 | <1 | 40 |  |  |  |
| **95-96** | Jan 1996 | 1 | 5 | 6.4 | <1 | 51 | 0.34 | 69.2 | 72.5 |
| **96-97** | Dec 1996 | 0.2 | 2.2 | 12.6 | <1 | 32 |  |  |  |
| **96-97** | Jan 1997 | 1.1 | 8 | 3.9 | <1 | 104 | 1.01 | 73.1 | 65.5 |
| **97-98** | 19/12/1997 | 1.6 | 7.7 | 30.55 | <1 | 102 | 0.98 |  |  |
| **97-98** | Jan 1998 | 0.8 | 6 | 8.5 | <1 | 16.5 |  |  |  |
| **98-99** | 22/12/1998 | 0.26 | 8.27 | 3.6 | <1 | 21.3 | 2.61 | 201.6 | 36.4 |
| **98-99** | Jan 1999 | 0.5 | 4.15 | 5.6 | <1 | 31.5 |  |  |  |
| **99-00** | Jan 2000 | 0.6 | 6.1 | 3.5 |  | 59.5 | 1.04 | 428.32 | 95.2 |
| **00-01** | 18/12/2000 | <0.5 | 4.85 | 7 | <1 | 42 | 2.4 | 372.56 | 95.74 |
| **00-01** | Jan 2001 | 0.85 | 46.8 | 17.55 | <1 | 86.5 |  |  |  |
| **01-02** | Jan 2002 | 1.6 | 9.4 | 399 | 3.1 | 114 | 0.06 | 1629.7 | 244.1 |
|  |  |  |  |  |  |  |  |  |  |
| **Control Bay** | |  |  |  |  |  |  |  |  |
| **94-95** | 14/12/1994 | <0.2 | 3.4 | 6.4 | <1 | 30 |  |  |  |
| **94-95** | 28/01/1995 | 0.5 | 6.7 | 9.7 | <1 | 48 |  |  |  |
| **95-96** | 9/01/1996 | 1 | 5.5 | 13.7 | <1 | 57 | 0.53 | 67.4 | 61.3 |
| **96-97** | Dec 1996 | 0.2 | 2.2 | 2.3 | <1 | 22 |  |  |  |
| **96-97** | 16/01/1997 | 0.5 | 6.2 | 3.5 | <1 | 46 | 1.26 | 82 | 48.6 |
| **97-98** | 19/12/1997 | 0.9 | 4 | 22.95 | <1 | 46 | 0.52 |  |  |
| **97-98** | Dec 98 | 0.65 | 4.15 | 7.05 | <1 | 12.5 |  |  |  |
| **98-99** | 22/12/1998 | 0.26 | 4.03 | 3.5 | <1 | 17 | 1.19 | 209.4 | 56.4 |
| **98-99** | Dec 99 | 1.2 | 5.2 | 6.1 | <1 | 36 |  |  |  |
| **99-00** | Jan 2000 | 0.75 | 8.75 | 5.6 | <1 | 61 | 0.19 | 127.52 | 30.43 |
| **00-01** | 18/12/2000 | <0.5 | 6.3 | 3.05 | <1 | 27 | 0.53 | 403.49 | 70.88 |
| **00-01** | Jan 2001 | 2.3 | 19.35 | 5.65 | <1 | 32 |  |  |  |
| **01-02** | Jan 2002 | 1 | 4.9 | 114 | 2.6 | 88 | 0.01 | 1469.7 | 102.1 |
|  |  |  |  |  |  |  |  |  |  |
| **Greywater Gully Ponds** | |  |  |  |  |  |  |  |  |
| **94-95** | 14/12/1994 | 76 | 396 | 2420 | 7 | 575 |  |  |  |
| **95-96** | 9/01/1996 | 6.6 | 52.9 | 2299 | 69 | 2744 |  |  |  |
| **94-95** | 14/12/1994 | 385 | 970 | 2300 | 13 | 1160 |  |  |  |
| **95-96** | 9/01/1996 | 2.9 | 38.6 | 160 | 65 | 3117 | 1.06 |  |  |

**Table 2B.** Water column and benthic mat-associated trace elements.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Water (mg m-3)** | | | | | | **Benthic mats (mg kg-1)** | | | | | |
| **Season** | Date | Cd | Cr | Cu | Ni | Pb | Zn | Cd | Cr | Cu | Ni | Pb | Zn |
| **Vanda Bay** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **95-96** | 9/01/1996 | 0.039 | 0.31 | 0.82 | 0.2 | 0.18 | 6.57 | 0.01 | 6.7 | 26 | 9.4 | 2.8 | 17 |
| **97-98** | 19/12/1997 | <0.1 | 0.97 | 0.69 | <1.0 | <0.5 | 3 | <0.05 | 6.47 | 20.67 | 8.3 | 2.23 | 20.33 |
| **98-99** | 22/12/1998 | 0.09 | 0.75 | 0.6 | <0.3 | 0.17 | 1.6 | <0.05 | 5.6 | 14.5 | 5.91 | 2.2 | 10.76 |
| **99-00** | Jan 2000 | 0.1 | 1 | 0.72 | <0.5 | <0.2 | 4.6 |  |  |  |  |  |  |
| **00-01** | 18/12/2000 | <0.1 | <1 | 0.5 | 0.23 | <0.2 | 4 | 0.02 | 4.9 | 16 | 6.2 | 1.7 | 13 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Control Bay** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **94-95** | 14/12/1994 |  |  |  |  |  |  |  |  |  |  |  |  |
| **94-95** | 28/01/1995 |  |  |  |  |  |  |  |  |  |  |  |  |
| **95-96** | 9/01/1996 | <0.01 | 0.69 | 0.43 | <0.1 | 0.11 | 1.77 | 6.7 | 8.7 | 24 | 9.6 | 2 | 17.3 |
| **97-98** | 19/12/1997 | <0.1 | 1.1 | <0.5 | <1.0 | <0.5 | 3 | 6.47 | 6.43 | 21.33 | 8.93 | 1.2 | 14.33 |
| **98-99** | 22/12/1998 | 0.12 | 0.78 | 0.6 | <0.3 | 0.2 | 1.6 | 5.6 | 4.8 | 16 | 6.41 | 0.9 | 5.85 |
| **99-00** | Jan 2000 | <0.1 | 3 | 1 | <0.3 | <0.2 | 2.6 |  |  |  |  |  |  |
| **00-01** | 18/12/2000 | <0.1 | <1 | 0.3 | <0.3 | <0.2 | 3 | 0.01 | 5.3 | 20 | 7.3 | 1.2 | 11 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Greywater Gully Ponds** | |  |  |  |  |  |  |  |  |  |  |  |  |
| **95-96** | 9/01/1996 | 0.2 | 2.43 | 20 | 0.75 | 0.15 | 5.83 |  |  |  |  |  |  |