SOUTH WEST WETLANDS MONITORING PROGRAM

REPORT 1977 – 2007

Report by J.A.K. Lane, A.G. Clarke, Y.C. Winchcombe, G.B. Pearson[1], W.P. Muir, B.W. Johnson & S.V. Elscot

Western Australian Department of Environment and Conservation

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Cover photograph of Senior Technical Officer Yvonne Winchcombe collecting water samples from Warrinup Swamp, near Frankland, in September 2005. © Ian Wheeler of DEC Manjimup.

[1] Grant Pearson retired from the WA Department of Environment and Conservation in February 2008, after almost 35 years service. He had a major role in SWWMP for most of that period, particularly from 1991 onwards.

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SUMMARY

This report presents 1977-2007 data from SWWMP, the South West Wetlands Monitoring Program conducted by the Western Australian Department of Environment and Conservation (DEC). Since 1997, this program has been funded under the WA Salinity Action Plan / Salinity Strategy as updated by the Government's response to the Salinity Taskforce report.

In this report we present all routinely-collected water level and water quality data to 2007. These data are presented in graphical form, on a wetland-by-wetland basis, for 152 wetlands, 101 of which are currently monitored. Administrative information concerning the wetlands that have been monitored, their map coordinates, the periods during which each has been monitored, their locations in terms of DEC Regions and Districts and Local Government Authorities (LGA's), and their tenure, is also presented.

The report provides an up-to-date overview of the data that have been collected and ready-reference lists of the wetlands. This information should be particularly useful for those with a responsibility or interest in the conservation and management of these and other wetlands in south-western Australia. Most of the monitored wetlands are within Nature Reserves or National Parks vested in the Conservation Commission of Western Australia and the WA Department of Environment and Conservation is responsible for their management. Some are within Natural Diversity Recovery Catchments and 'Ramsar' Sites and many are 'Directory' (nationally significant) Sites.

Researchers should also find the report useful as it identifies which wetlands have long periods (up to three decades or more) of systematic monitoring of physico-chemical attributes, knowledge which could assist in the selection of most-suitable wetlands for related studies. Pronounced year-to-year or longer-term variations or trends are readily apparent in the graphs of some wetlands, as is the absence of pronounced variations or trends in others. Thus the wetlands of SWWMP demonstrate a wide variety of hydrological responses to landscape setting, surface and groundwater catchment characteristics, local climate and, in some cases, management interventions.

Attention is drawn to a number of wetlands (LGA in brackets) showing changes of particular interest or concern. These are Atkins Yate (Lake Grace), Bambun (Gingin), Boat Harbour 1 (Denmark), Byenup (Manjimup), Clifton (Mandurah), Crackers (Dandaragan), Davies (Augusta-Margaret River), Hinds (Wongan-Ballidu), Jandabup (Wanneroo), Jerdacuttup (Ravensthorpe), Logue (Carnamah), Nine Mile (Murray), Noobijup (Cranbrook), Toolibin (Wickepin), Tordit-Gurrup (Manjimup), Unicup (Cranbrook), Warden (Esperance), Yarnup (Cranbrook) and Yellilup (Jerramungup).

Regional and District staff of DEC are encouraged to view the data for all wetlands in their respective areas of responsibility as other wetlands may also show changes of interest or management concern.

Since 1997, the lakebed and shoreline contours (bathymetry), inflows and outflows of more than 20 monitored wetlands have been mapped under SWWMP, with DEC Regional and District funding support. This work enables water surface areas, water volumes and salt loads to be calculated from SWWMP water level and salinity data. This permits modelling of water and salt balances and will facilitate assessments of likely hydrological and ecological impacts of drainage, diversion, pumping and storage proposals, proposed land use changes and predicted climate change.

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1. INTRODUCTION

This report presents 1977-2007 data and other information from SWWMP[1], a south-west region wetlands monitoring program conducted by the Western Australian Department of Environment and Conservation (DEC) and its predecessors over the past three decades. Since 1997, this program has been funded under the Western Australian Salinity Action Plan (Government of Western Australia 1996a) and State Salinity Strategy (State Salinity Council 2000a) as updated by the Government's response (Government of Western Australia 2002) to the Salinity Taskforce report (Frost *et al.* 2001). A detailed account of SWWMP, including analyses of data to 2000, may be found in Lane *et al.* (2004). A review of this and other programs under the Salinity Action Plan has been published (Wallace 2001).

In this report we present all water depth and water quality data collected routinely from the program's commencement in 1977 to 2007. These data are presented in graphical form, on a wetland-by-wetland basis, for 152 wetlands (Figure 1), 101 of which are currently monitored, 25 of them intensively (Table 1). Administrative information concerning the wetlands that have been monitored, their map coordinates, the periods during which each has been monitored, their locations in terms of DEC Regions and Districts and Local Government Authorities (LGA's), and their tenure, is also presented (Tables 1-3).

The main purposes of this report are to provide an up-to-date visual overview of the data that have been collected and ready-reference lists of the wetlands. This information should be particularly useful for those with a responsibility or interest in the conservation and management of these and other wetlands in south-western Australia. Most of the monitored wetlands are within Nature Reserves or National Parks vested in the Conservation Commission of Western Australia and the WA Department of Environment and Conservation is responsible for their management. Some are within Natural Diversity Recovery Catchments (Government of Western Australia 1996a; Wallace & Lloyd 2008) and Ramsar Sites (Government of Western Australia 1990, 2000; Wetlands International 2002) and many are Directory Sites (Environment Australia 2001) (Tables 4 & 5).

Researchers should also find the information useful as it identifies which wetlands have long periods (up to three decades or more) of systematic monitoring of physico-chemical attributes, knowledge which could assist in the selection of most-suitable wetlands for related studies. Pronounced year-to-year or longer-term variations or trends are readily apparent in the graphs of some wetlands, as is the absence of pronounced variations or trends in others. Thus the wetlands of SWWMP demonstrate a wide variety of hydrological responses to landscape setting, surface and groundwater catchment characteristics, local climate and, in some cases, management interventions.

2. RESULTS

In order to make this report available in a timely fashion, statistical trend analyses have not been performed on the physico-chemical data presented here. Trends to 2000 of 41 of these wetlands (those monitored for 20 or more years at that time) have previously been reported (Lane *et al.* 2004) and readers will find it helpful to compare the latest data with the results of that work. Additionally, data from 25 intensively-monitored SWWMP wetlands (see Table 1), not all of which have been monitored for 20 or more years, is currently being analysed. Results are to be reported soon, in combination with results from related studies concerning fringing and emergent vegetation, waterbirds, aquatic invertebrates, groundwater and detailed water chemistry[2].

Without statistical analysis, it would be potentially misleading to present lists of wetlands that appear to show trends, as opposed to those that do not. On the other hand, it is considered useful to draw the reader's attention here to a number of wetlands that have shown changes of possible interest or concern. These wetlands follow below, with the relevant LGA's in brackets. The data referred to are presented in the relevant Graphs, which are also arranged alphabetically.

Atkins Yate (Lake Grace): There has been a steep decline in water levels from ≈ 4.5m in 2000 (a year of flooding rains) to near-dry / dry in 2006 and 2007. Salinities have risen steeply over this period and Total P and Total N concentrations since 2004. Nearby Bennetts and Ronnerup have shown similar changes over that period.

Bambun (Gingin): This is one of few SWWMP wetlands that have shown a persistent long-term decrease in salinity. It remains fresh (<1ppt) to 2007, whereas from 1979 (when monitoring began) to 1985 it was brackish (1-3ppt). It is perhaps trending upwards in water levels, though to 2000 this trend was not statistically significant (p=0.085) (Lane *et al.* 2004).

[1] South West Wetlands Monitoring Program

[2] See Cale *et al.* (2004), Cale & Halse (2006a-u), Gibson *et al.* (2004), Halse *et al.* (2002) and Lyons *et al.* (2007), for example, for earlier reports from these related studies.

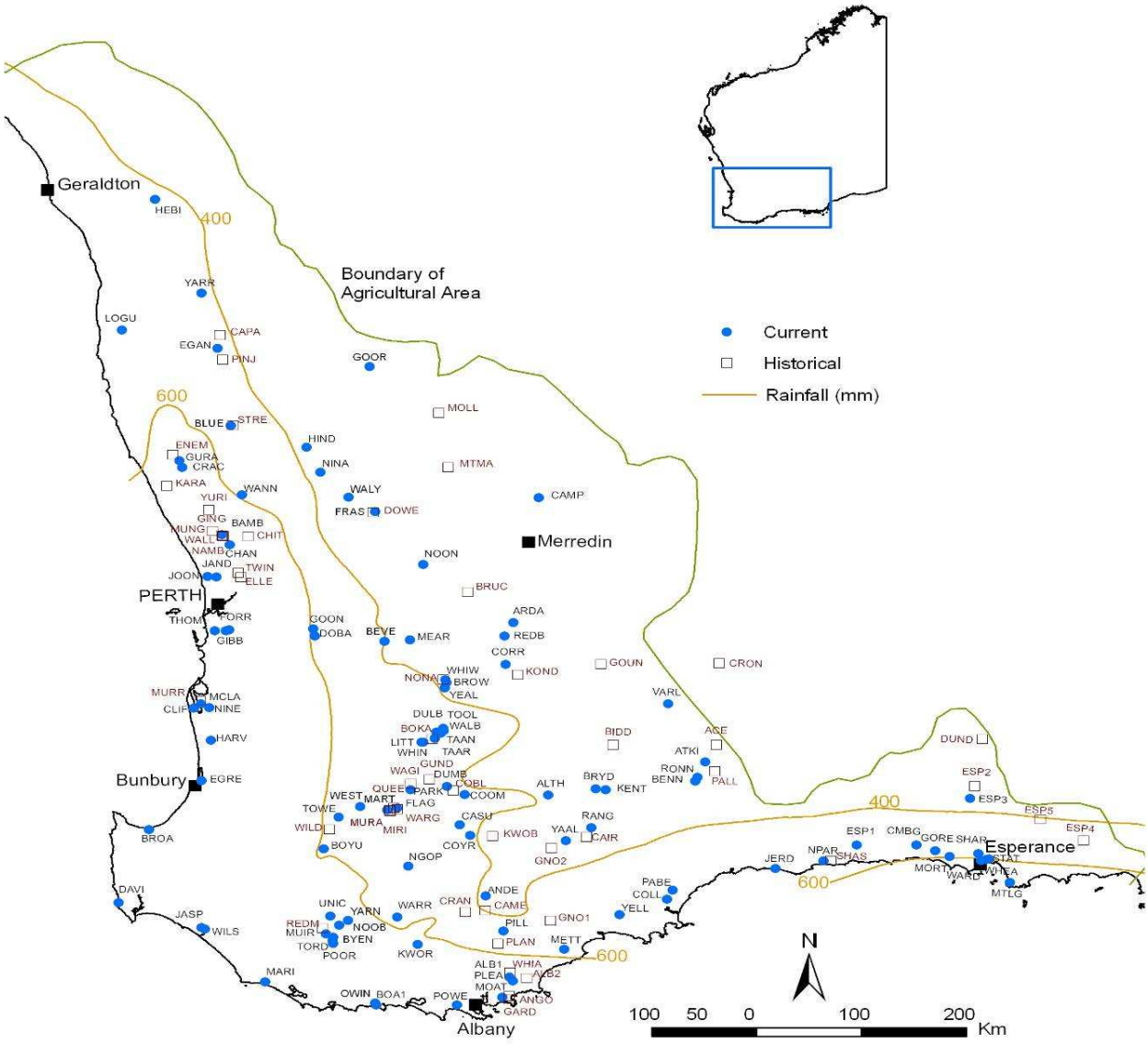

Figure 1. Wetlands currently and previously monitored under the South West Wetlands Monitoring Program.

Boat Harbour 1 (Denmark): Since monitoring began in 1992, salinities have been trending upwards from fresh to brackish. Much of this change has occurred since 2000, the start of a period in which water levels have been lower in most years than previously.

Byenup (Manjimup): Salinities appear to be rising over the long term (1977-2007), though there was no statistically-significant trend to 2000 (Lane *et al.* 2004). As is the case with nearby (and hydrologically-connected) Tordit-Gurrup (see below), there is a pronounced inverse relationship between water levels and salinities, with levels lowest and salinities highest in 1987, 1995, 2001 and 2007.

Clifton (Mandurah): Knot *et al*. (2003) reported an increase in salinities and salt loads of Lake Clifton from the early 1990s to 2000. Monitoring to 2007 indicates that this trend is continuing. This wetland is now saline (10<50ppt) to hypersaline (≥50ppt) in spring and its internationally-recognised values are thought to be under threat.

Crackers (Dandaragan): The statistically-significant upward trend in salinities from 1981 to 2000 (Lane *et al.* 2004) appears to be continuing, with salinities from 2002 to 2007 being predominantly in the brackish (1-3ppt), rather than fresh (<1ppt), category.

Davies (Augusta-Margaret River): Salinities have continued to rise since 2000, after a period of eight years (1993-2000) of little change preceded by an apparent rise in earlier years (monitoring began in 1991). This wetland is now at the high end of brackish (1-3ppt).

Hinds (Wongan-Ballidu): There was an exceptional filling event (to >4m) in 1999. It took 2-3 years for water levels to decline to 'normal' (of the period 1979-2007). Note that this wetland was not monitored from 1992 (when recreational duck hunting in Western Australia was banned) to 1996 (when the WA Salinity Action Plan was launched) (See Section 2 of Lane *et al.* 2004 for the relevant history).

Jandabup (Wanneroo): September and November pH values have returned to normal (1983-2007) since their fall to low levels (pH 4-5) in 1998 and 1999. This temporary acidification followed (lag of one year) and then coincided with a period of 2-3 years of lower water levels and prolonged drying of the lake bed and is thought to have possibly been due to the oxidation of sulfur compounds from one or more sources (Sommer & Horwitz 2001). Pumping of groundwater was recommenced in summer 1999-2000 (it had ceased in autumn 1996), because minimum water level criteria were not reached during the previous two summers. This prevented the wetland from drying in summer 1999-2000 (Sommer & Horwitz *op. cit*.).

Jerdacuttup (Ravensthorpe): Water levels and salinities of Jerdacuttup continue to oscillate markedly over 5-15 year time periods, there being a strong inverse relationship between these two parameters in this wetland. Total nitrogen concentrations have shown a similar, inverse relationship with water levels during the relatively short period that it (Total N) has been monitored.

Logue (Carnamah): This wetland has now been dry / near-dry in September and November each year for four years (2004-2007). This in an unusually long period for Logue[1], which has been monitored under SWWMP for nearly three decades.

Nine Mile (Murray): The pronounced downward trend in water levels, which began in 1983 (or possibly earlier, monitoring began in 1981), has continued to 2007. Salinities have remained fresh (<1 ppt) over the entire period of monitoring. The long-term decline in water levels has been accompanied by substantial spreading of bulrush *Typha orientalis*, which now covers most of the wetland area (Jaensch *et al*. in prep.).

Noobijup (Cranbrook): Depths have declined steeply and salinities have risen over the relatively short period of monitoring (1999-2007). In the latter years of this period, pH has also fallen, from ≈ 7 to ≈ 4 pH units. Similar declines in pH associated with lower water levels have been observed at nearby Unicup and Yarnup (see below) and also at distant Jandabup (see above).

Toolibin (Wickepin): This iconic wetland (Hooper & Wallace 1994) has now been dry / near-dry in September and November each year for eight years (2000-2007). This in an unusually long period for Toolibin (at least in the past three decades) and is due to a combination of drier years and diversion of higher-salinity surface flows away from the lake (Jones *et al*. 2008)[1].

Tordit-Gurrup (Manjimup): As is the case with nearby (and hydrologically connected) Byenup (see above), there is a pronounced inverse relationship between water levels and salinities of Tordit-Gurrup, with levels lowest and salinities highest in 1987, 1995 and 2007.

[1] The latest monitoring has revealed that Logue and Toolibin were dry again in September and November 2008.

Unicup (Cranbrook): pH values rose after the major filling event of 1988 and have consistently been within the range 7-9 pH units since 1991. Prior to 1988, values were generally within the range 4-6. Note that Gibson *et al*. (2004) reported a 'major collapse' of Jointed Twig-rush *Baumea articulata* in a Unicup (and nearby Yarnup, see below) vegetation monitoring quadrat between October 1997 and October 2002, with cover abundance scores changing from 30-70% to 2-10%. These authors did not identify the cause of the collapse, but did point to 'a marked decline in water depth – and increase in salinity – of Lake Unicup in 2001 and 2002'.

Warden (Esperance): Water levels have remained high for the past nine years (1999-2007). This is an unusually long period (at least in the past three decades) for Warden and is due to a combination of catchment clearing, resulting in increased run-off and groundwater rise (Marimuthu *et al.* 2005), and extreme rainfall events (Kusumastuti 2006). Rises in groundwater levels started directly impacting the wetlands by prolonging inundation from about 1986 onwards (Robertson & Massenbauer 2005). Engineering works are considered essential to reduce Warden's water levels and thereby recover shorebird habitat and degraded riparian vegetation (Walshe & Massenbauer 2008).

Yarnup (Cranbrook): The trend of increasing salinities (1980-2000; Lane *et al*. 2004) is continuing and possibly accelerating. pH values, which are normally within the range 6-8 pH units, have been lower (3-5 pH units) in and immediately following recent years (2001, 2007) of lower water levels. Note that Gibson *et al.* (2004) reported a 'major collapse' of *Baumea articulata* in a Yarnup (and nearby Unicup, see above) vegetation monitoring quadrat between October 1997 and October 2002, with cover abundance scores changing from 30-70% to 2-10%. These authors did not identify the cause of the collapse, but did point to markedly lower water depth and pH in 2001, with pH remaining low in 2002, and higher salinities in both years. Rising acid saline groundwater is a threat to this and other wetlands in the Muir-Unicup catchment (Smith & Hearne 2006).

Yellilup (Jerramungup): Salinities have risen dramatically since the mid 1990s when water levels began to fall following the exceptional filling event (to >4m) of 1988. The waters of Yellilup Lake (not to be confused with nearby Yellilup Swamp) were predominantly fresh-brackish (<3ppt) prior to 1992 but are now saline (10<50ppt). Prolonged inundation (1988-1994 at least) is thought to have been the primary cause of the extensive death of Flat-topped Yates *Eucalyptus occidentalis* and melaleucas that once extended over a large part of the lake floor. These changes have had major consequences for use by waterbirds (Jaensch *et al.*, in prep.).

3. CONCLUDING REMARKS

Readers are encouraged to view all Graphs (Ace-Yurine) of this report for other changes of possible interest or concern, and perhaps for re-assurance that, three decades since commencement of SWWMP, some wetlands clearly remain in good condition, at least in terms of the monitored parameters.

Regional and District staff of the Department of Environment and Conservation may find it useful to refer to Table 2 in order to identify monitored wetlands in their areas of management responsibility. Requests for data should be directed to jim.lane@dec.wa.gov.au. Offers to collect additional data for SWWMP are welcome as these could assist more-intensive hydrological investigations which, particularly in the case of high conservation value wetlands under threat, would be valuable.

Since 1997, SWWMP staff, working with Landgate (formerly known as the WA Department of Land Information) and contract surveyors, and with significant funding support from several DEC Regions and Districts, have mapped the lakebed and shoreline contours (bathymetry), inflows and outflows of more than 20 SWWMP wetlands. This enables water surface areas, water volumes and salt loads (tonnes) to be calculated from measured depths and salinities and thereby assists in water balance and salt balance modelling and the assessment of likely impacts on specific wetlands of drainage, diversion, pumping and storage proposals, proposed land use changes and predicted climate change. Requests for this mapping should also be directed to jim.lane@dec.wa.gov.au. Funded requests to map the bathymetry of other SWWMP wetlands, particularly wetlands of high conservation value under threat and intensively-monitored wetlands, are also welcome. SWWMP Senior Technical Officer Alan Clarke has considerable experience and expertise in organising, supervising and conducting specialist work in this field.

SWWMP depth gauges at the 51 historically-monitored wetlands (monitored under SWWMP at some time in the past but not currently; see Tables 1-3) are not maintained and many are now totally illegible or even missing altogether. Readers with an interest in the resumption of monitoring at one or more of these wetlands, even for a short period, are encouraged to contact SWWMP staff to find out details of the legally-protected Landgate Bench Marks (local survey datums) at each of these wetlands, so that new depth gauges, if needed, can be installed to the same elevation as those previously installed. Water level data continuity can thereby be maintained.

This report has been prepared as the first in a series of annual reports, aimed at putting the most recent SWWMP data in front of readers in un-analysed form as soon as possible after data collection. Results and interpretations of statistical trend analyses are to be presented in other, less frequent reports covering the longer time periods required to assess trends.

4. ACKNOWLEDGEMENTS

The authors wish to thank the many people who have participated in SWWMP or assisted in other ways.

Most SWWMP data have been collected by the principal authors (Pearson, Lane, Clarke and Winchcombe) and D.R. Munro (deceased). Bill Muir, Brent Johnson and Sue Elscot each conducted a number of monitoring runs between 2000 and 2007 and their able involvement was vital. Keith Morris and Greg Keighery are thanked for making Brent and Bill available for this work.

In early years, principally the 1970's and 1980's, some data were collected by (in alphabetic order) Laurie Anderson, Margaret Brock, Bob Burking (dec.), Barry Carson, P. Conedera, R. Daniels, Ainsley Darcy-Evans, F. Dart-Kelly, G. Davies, G. Drew, M. Ellis, Phil Fuller, A. Goudie, Malcolm Graham, Stuart Halse, Sue Harrington, R. Heathering, Stephen Hopper, David James, Roger Jaensch, Chris Johns, D. Jones, R. Kenney, Peter Lambert, L. Martin, Joan Merrifield, Kingsley Miller, Susan Moore, Ray Motteram, Bill Muir, N. Plowman, Chris Robinson, Leon Silvester, Ray Smith, Andrew Storey, Ken Wallace, A. Watson, Andy Williams, D. Yates and Ken Youngson. Numerous volunteers have also assisted the authors during field trips. In recent years these have included Jeff Anderson, Mathilde Breton, Geoff Hansen, Floyd Irvine, Nicole Lincoln, Ken Loughton, Ian Wheeler and John Winchcombe. Grant Pearson was also assisted by Ted Costello, Tom Coughran, Wally Newman, Jen Pearson, Rebecca Pearson, Emma Pearson, Desmond Pratt, Laurie Prestage and Neville Watts.

Roger Schulz and Jenny McGuire of the Chemistry Centre of Western Australia (formerly within Department of Industry and Resources, now Department of Mines and Petroleum) have supervised the analysis of many water samples and provided much relevant advice.

Bob McCarthy of Landgate (formerly known as Department of Land Information) provided invaluable advice and assistance concerning surveying of depth gauges, installation of Bench Marks and connection to Australian Height Datum at all 152 SWWMP wetlands.

Wilfe Lehre, Nick Caputi, Norman Hall, Paul Gioia and Russell Marks (Greenbase Consulting) programmed a multitude of computers for the storage, analysis and reporting of SWWMP data over three decades. Matt Williams of DEC provided statistical advice concerning trends analysis of SWWMP data to 2000 (reported in Lane *et al.* 2004).

DEC Director General Keiran McNamara and DEC Natural Resources Branch Manager Ken Wallace had lead roles in securing the funds needed for SWWMP to continue beyond 1996 and for all data collected since 1977 to be secured, stored, analysed and reported.

Ken Wallace provided constructive comments and suggestions on a near-final draft of this document.

SWWMP has been entirely funded by the Government of Western Australia through the Department of Environment and Conservation (2006-present) and its predecessors the Department of Conservation and Land Management (1985-2006) and the Department of Fisheries and Wildlife (1977-1985).

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PHOTOS

Photo 1: DEC depth gauge 'D' at Lake Muir on 18Sep2008 read 0.74m.

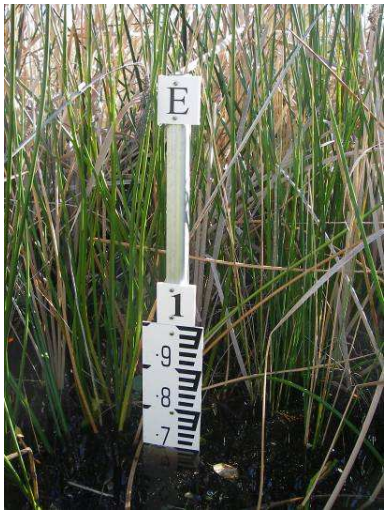


Photo 2: DEC depth gauge 'E' at Thomsons Lake on 04Aug2008 read 0.70m.

Photo 3: DEC depth gauge 'A' at Lake Wilson on 03Nov2008 read 3.85m.

Photo 4: DEC depth gauge 'A' at Parkeyerring Lake on 18Jul2008 read 0.40m.

Photo 5: DEC depth gauge 'C' at Lake Clifton on 13Sep2008 read 4.30m.

Photo 6: DoW depth gauge at Gibbs Road Swamp on 04Aug2008 read 24.59mAHD

Photographs 1-6: SWWMP Depth Gauges. Each depth gauge consists of one or more 1.00m metal or plastic gauge plates attached to a metal or wooden post. The gauge plate markings are in 0.01m increments, with labelling at 0.10m intervals. Labels 1, 2, 3, etc., at the top of each depth gauge indicate the height in metres (i.e. 1.00m, 2.00m, etc.) at the top of the uppermost gauge plate. Labels A, B, C, etc., where present, identify individual depth gauges at each wetland.

DEC gauge readings indicate the water depth at the deepest location in the wetland, even though gauges are usually not at the deepest location, but instead are closer to the shore, to facilitate viewing.

Readings are taken from Department of Water (DoW) gauges at several metropolitan wetlands. These DoW gauges indicate height above Australian Height Datum (mean sea level), which SWWMP personnel convert to wetland water depth.

Since 2007, the standard practice of SWWMP personnel when taking gauge readings has been to take a digital photograph of the gauge at the time of reading, so that all records may be checked and verified or corrected back in the office.

Photo 7: 'Munro Datum' (3.00m) at Lake Logue in Sep 2008.

Photo 8: 'Landgate' Bench Mark HZ929 at Thomsons Lake in Aug 2008.

Photo 9: 'Landgate' Witness Plate at Goonaping Swamp in Sep 2008.

Photo 10: 'Landgate' Bench Mark and Witness Plate at Cranbrook 25812 in Nov 2008.

Photographs 7-10: SWWMP Datums and Bench Marks. Depth gauges installed prior to 1997 were surveyed to a nearby 'Munro Datum'; a block of concrete installed by SWWMP Senior Technical Officer Don Munro for data security. Numbers on top of these Datums indicate the height (m) above the deepest location in the wetland.

Since 1997, legally-protected 'Landgate' (WA Department of Land Information) Bench Marks (BM's) have been installed at each wetland and the gauges and Munro Datums have been surveyed to them. All of these BM's have since been surveyed to Australian Height Datum (mean sea level). BM installation and survey has been a cooperative program of DEC and 'Landgate'.

TABLES

Table 1. Monitored wetlands, codes, coordinates, Local Government Authorities, monitoring periods and monitoring status. **This Table includes all wetlands regularly monitored at any time since commencement of the South West Wetlands Monitoring Program, sorted by wetland name.**

Wetland Name[1]	Code	Easting[2]	Northing[2]	Zone	Local Government Authority	Period monitored[3,4,5]	101 Current Wetlands[6]	Intensively Monitored Wetlands[7]
Ace[8]	*ACE*	*758001*	*6344738*	*50*	*Lake Grace*	*7/80 - 5/85, 4/00*		
Albany 26385	ALB1	606041	6148594	50	Albany	5/81 - 5/85, 9/98 onwards	Y	
Albany 27157	*ALB2*	*618826*	*6147490*	*50*	*Albany*	*3/80 - 5/85*		
Altham	ALTH	634562	6302593	50	Kent	7/80 - 11/91, 4/00 onwards	Y	Y
Anderson	ANDE	588666	6217158	50	Tambellup	5/81 - 3/92, 9/00 onwards	Y	
Angove	*ANGO*	*605824*	*6132574*	*50*	*Albany*	*11/79 - 5/85, 9/90, 4/00*		
Ardath	ARDA	609068	6448377	50	Bruce Rock	9/99 onwards	Y	Y
Atkins Yate	ATKI	750071	6330498	50	Lake Grace	4/00 onwards	Y	
Bambun	BAMB	394880	6522829	50	Gingin	5/79 onwards	Y	
Bennetts	BENN	742440	6314572	50	Lake Grace	9/92 onwards	Y	Y
Beverley[9]	BEVE	514297	6432612	50	Beverley/Brookton/ Quairading	6/78 onwards	Y	
Biddy	*BIDD*	*682121*	*6344868*	*50*	*Lake Grace*	*7/82 - 5/85, 9/91 - 1/93, 4/00*		
Blue Gum	BLUE	401231	6615183	50	Moora	11/99 onwards	Y	Y
Boat Harbour 1	BOA1	508245	6124962	50	Denmark	8/91 onwards	Y	
Bokan	*BOKA*	*549253*	*6349883*	*50*	*Narrogin*	*7/79 - 5/85*		
Boyup Brook 18239[9]	BOYU	469777	6257199	50	Boyup Brook	9/80 onwards	Y	Y
Broadwater	BROA	341176	6273426	50	Busselton	11/85 onwards	Y	
Brown	BROW	559606	6397735	50	Corrigin	7/79 - 11/91, 9/97 onwards	Y	
Bruce Rock 30969	*BRUC*	*575133*	*6473941*	*50*	*Bruce Rock*	*5/82 - 5/85*		
Bryde	BRYD	669625	6308051	50	Kent	6/79 onwards	Y	Y
Byenup	BYEN	476449	6182437	50	Manjimup	6/77 onwards	Y	
Cairlocup	*CAIR*	*662520*	*6266817*	*50*	*Kent*	*9/80 - 5/85, 4/00*		
Camel	*CAME*	*588040*	*6204777*	*50*	*Cranbrook*	*8/80 - 5/85, 4/00*		
Campion	CAMP	627676	6554227	50	Nungarin/Merredin	3/79 - 11/91, 9/99 onwards	Y	Y
Capamaura	*CAPA*	*393109*	*6691458*	*50*	*Carnamah*	*7/80 - 5/85, 3/90*		
Casuarina	CASU	569525	6277315	50	Katanning	5/78 onwards	Y	
Chandala	CHAN	400545	6514425	50	Chittering	5/79 onwards	Y	
Chittering	*CHIT*	*414089*	*6521328*	*50*	*Chittering*	*4/78 - 11/86*		
Clifton	CLIF	374037	6376139	50	Mandurah	11/85 onwards	Y	
Coblinine	*COBL*	*564568*	*6306209*	*50*	*Dumbleyung*	*6/79 - 11/91*		
Collets Road	COLL	721678	6214392	50	Jerramungup	9/01 onwards	Y	
Coomalbidgup	CMBG	349163	6267892	51	Esperance	11/99 onwards	Y	Y
Coomelberrup	COOM	573060	6303130	50	Dumbleyung	5/78 - 5/85, 3/93, 9/97 onwards	Y	Y
Corrigin 12900[9]	CORR	603415	6413294	50	Corrigin	7/82 onwards	Y	Y
Coyrecup	COYR	577072	6268374	50	Katanning	5/78 onwards	Y	Y
Crackers	CRAC	365586	6579519	50	Dandaragan	7/80 onwards	Y	
Cranbrook 25812	*CRAN*	*573707*	*6203482*	*50*	*Cranbrook*	*8/80 - 8/85, 4/00*		
Cronin	*CRON*	*760181*	*6413851*	*50*	*Kondinin*	*4/81 - 5/85, 11/95, 4/01*		
Davies	DAVI	318852	6211560	50	Augusta/Margaret River	4/91 onwards	Y	
Dobaderry	DOBA	463077	6437224	50	Beverley	9/80 onwards	Y	
Dowerin	*DOWE*	*505689*	*6541494*	*50*	*Dowerin*	*6/79 - 5/81, 9/99*		
Dulbinning	DULB	557418	6359015	50	Wickepin	7/79 onwards	Y	
Dumbleyung	DUMB	560071	6309876	50	Dumbleyung/Wagin	6/79 onwards	Y	Y

Table 1 continued.

Wetland Name	Code	Easting	Northing	Zone	Local Government Authority	Period monitored	101 Current Wetlands	Intensively Monitored Wetlands
Dundas 33113	*DUND*	*391998*	*6359382*	*51*	*Dundas*	*11/79 – 11/91, 4/00*		
Eganu	EGAN	391567	6680556	50	Coorow	7/78 onwards	Y	Y
Egret	EGRE	379666	6314855	50	Harvey	5/85 onwards	Y	
Ellen Brook	*ELLE*	*408739*	*6486519*	*50*	*Swan*	*7/79 – 11/84*		
Eneminga	*ENEM*	*358697*	*6590178*	*50*	*Dandaragan*	*7/80 – 11/91*		
Esperance 26410	ESP1	304849	6265010	51	Esperance	11/81 onwards	Y	
Esperance 27768	*ESP2*	*388786*	*6319769*	*51*	*Esperance*	*6/81 - 5/85, 4/00*		
Esperance 27985	ESP3	385963	6309342	51	Esperance	6/81 – 11/91, 4/00 onwards	Y	
Esperance 32128	*ESP4*	*471131*	*6278515*	*51*	*Esperance*	*7/82 - 5/85*		
Esperance 32776	*ESP5*	*438276*	*6294610*	*51*	*Esperance*	*6/81 - 5/85, 4/00*		
Flagstaff	FLAG	523642	6291467	50	Woodanilling	6/79 – 11/91, 9/97 onwards	Y	
Forrestdale	FORR	400062	6442240	50	Armadale	11/77 onwards	Y	
Frasers[9]	FRAS	507236	6542443	50	Dowerin	11/99 onwards	Y	Y
Gardner	*GARD*	*605828*	*6129943*	*50*	*Albany*	*5/81 - 5/85, 9/89, 9/90, 4/00*		
Gibbs	GIBB	397627	6441667	50	Armadale	9/92 onwards	Y	
Gingin 31241	*GING*	*387922*	*6525676*	*50*	*Gingin*	*6/79 - 5/85*		
Gnowangerup 26264	*GNO1*	*636100*	*6196278*	*50*	*Gnowangerup*	*3/80 – 11/91*		
Gnowangerup 26569	*GNO2*	*636830*	*6257497*	*50*	*Gnowangerup*	*7/82 - 5/85, 4/00*		
Goonaping	GOON	461797	6443309	50	Beverley	11/99 onwards	Y	Y
Goorly	GOOR	503350	6664801	50	Dalwallinu	9/00 onwards	Y	
Gore	GORE	363166	6263536	51	Esperance	11/79 onwards	Y	
Gounter	*GOUN*	*672997*	*6413190*	*50*	*Kondinin*	*7/80 – 11/91, 5/98*		
Gundaring	*GUND*	*546974*	*6315587*	*50*	*Wagin*	*5/78 – 11/91*		
Guraga	GURA	363476	6585412	50	Dandaragan	9/82 onwards	Y	
Harvey 12632	HARV	386550	6348919	50	Harvey	8/80 onwards	Y	
Hebitons	HEBI	345831	6806160	50	Mullewa	9/00 onwards	Y	
Hinds	HIND	456859	6596884	50	Wongan-Ballidu	6/79 – 11/91, 9/97 onwards	Y	
Jandabup	JAND	390937	6486982	50	Wanneroo	4/78 onwards	Y	
Jasper	JASP	379737	6190394	50	Nannup	11/85 onwards	Y	
Jerdacuttup	JERD	246655	6241791	51	Ravensthorpe	11/79 onwards	Y	
Joondalup	JOON	384352	6487445	50	Joondalup	4/78 onwards	Y	
Karakin	*KARA*	*354428*	*6563848*	*50*	*Gingin*	*5/79 - 5/85, 9/87*		
Kent 29020[9]	KENT	676818	6307259	50	Kent	9/80 - 5/85, 4/00 onwards	Y	
Kondinin	*KOND*	*612045*	*6404002*	*50*	*Kondinin*	*6/79 – 11/91, 4/00*		
Kwobrup	*KWOB*	*593500*	*6267648*	*50*	*Kent*	*6/79 – 11/91, 4/00*		
Kwornicup	KWOR	538575	6176168	50	Plantagenet	11/79 onwards	Y	
Little White	LITT	541357	6347281	50	Narrogin	7/79 – 11/91, 9/97 onwards	Y	
Logue	LOGU	321114	6695888	50	Carnamah	5/79 onwards	Y	Y
Maringup	MARI	426553	6144690	50	Manjimup	6/91 onwards	Y	
Martinup	MART	516363	6289934	50	Woodanilling	6/79 – 11/91, 9/97 onwards	Y	
McLarty	MCLA	379489	6379596	50	Murray	11/93 - 11/94, 9/96 onwards	Y	
Mears	MEAR	533098	6433941	50	Brookton	6/78 – 11/91, 9/97 onwards	Y	
Mettler	METT	646369	6172015	50	Albany	9/82 onwards	Y	
Miripin	*MIRI*	*518297*	*6288850*	*50*	*Woodanilling*	*6/81 - 5/85, 5/92*		

Table 1 continued.

Wetland Name	Code	Easting	Northing	Zone	Local Government Authority	Period monitored	101 Current Wetlands	Intensively Monitored Wetlands
Moates	MOAT	600908	6131536	50	Albany	11/79 onwards	Y	
Mollerin	*MOLL*	*554171*	*6625441*	*50*	*Koorda*	*7/80 – 5/85*		
Mortijinup	MORT	373710	6259469	51	Esperance	4/00 onwards	Y	
Mount Le Grand	MLGR	419066	6240163	51	Esperance	9/00 onwards	Y	
Mount Marshall 26687[9]	*MTMA*	*560956*	*6579662*	*50*	*Mt Marshall*	*7/81 – 11/91, 5/99*		
Muir	MUIR	471032	6185028	50	Manjimup	11/79 onwards	Y	
Mungala	*MUNG*	*395151*	*6521364*	*50*	*Gingin*	*6/79 – 5/85*		
Murapin	*MURA*	*517769*	*6289522*	*50*	*Woodanilling*	*6/81 – 5/85*		
Murray 24739	*MURR*	*378784*	*6382052*	*50*	*Murray*	*9/80 – 5/85*		
Nambung	*NAMB*	*394607*	*6521821*	*50*	*Gingin*	*6/79 – 5/85*		
Ngopitchup	NGOP	531747	6242644	50	Broomehill	4/00 onwards	Y	
Ninan	NINA	467029	6575597	50	Wongan-Ballidu	7/78 – 11/91, 9/97 onwards	Y	
Nine Mile	NINE	385536	6376505	50	Murray	6/81 onwards	Y	
Nonalling	*NONA*	*557389*	*6400285*	*50*	*Corrigin*	*7/79 – 5/85*		
Noobijup	NOOB	480867	6192653	50	Cranbrook	9/99 onwards	Y	Y
Noonying	NOON	542507	6497744	50	Tammin	6/79 – 11/91, 9/97 onwards	Y	
North Parriup	NPAR	281562	6250268	51	Ravensthorpe	4/00 onwards	Y	
Owingup	OWIN	507258	6126756	50	Denmark	7/91 onwards	Y	
Pabelup South	PABE	725800	6222286	50	Jerramungup	4/00 onwards	Y	
Pallarup	*PALL*	*756890*	*6322415*	*50*	*Lake Grace*	*7/80 – 11/91, 4/00*		
Parkeyerring	PARK	533156	6307263	50	Wagin	5/78 – 11/91, 9/97 onwards	Y	Y
Pillenorup	PILL	601412	6187773	50	Plantagenet	4/00 onwards	Y	
Pinjarrega	*PINJ*	*395411*	*6670581*	*50*	*Coorow*	*5/79 – 11/91*		
Plantagenet 25386	*PLAN*	*597710*	*6176617*	*50*	*Plantagenet*	*11/79 – 5/85, 11/93 – 11/96, 6/98*		
Pleasant View	PLEA	608357	6145314	50	Albany	11/79 onwards	Y	Y
Poorginup	POOR	476447	6177128	50	Manjimup	6/77 onwards	Y	
Powell	POWE	567497	6125091	50	Albany	6/81 onwards	Y	
Queerearrup	*QUEE*	*521251*	*6291518*	*50*	*Woodanilling*	*10/78 – 5/85, 9/88*		
Range Road Yate	RANG	666083	6275186	50	Kent	4/00 onwards	Y	
Red (Bruce Rock)	REDB	602548	6437065	50	Bruce Rock	7/81 – 5/85, 9/00 onwards	Y	
Red (Manjimup)	*REDM*	*468592*	*6189580*	*50*	*Manjimup*	*11/81 – 11/91, 4/00*		
Ronnerup	RONN	744169	6317786	50	Lake Grace	4/00 onwards	Y	Y
Shark	SHAR	394568	6263073	51	Esperance	11/79 onwards	Y	
Shaster	*SHAS*	*287219*	*6250710*	*51*	*Ravensthorpe*	*11/79 – 11/91*		
Station	STAT	402615	6259237	51	Esperance	3/80 onwards	Y	
Streets	*STRE*	*402493*	*6614985*	*50*	*Moora*	*10/78 – 11/91*		
Taarblin North[10]	TAAN	552350	6355668	50	Narrogin	9/04 onwards	Y	
Taarblin South[10]	TAAR	551258	6350395	50	Narrogin	5/78 onwards	Y	
Thomsons	THOM	389516	6441482	50	Cockburn	11/78 onwards	Y	
Toolibin	TOOL	557650	6357248	50	Wickepin	5/78 onwards	Y	Y
Tordit-Gurrup	TORD	476135	6179406	50	Manjimup	6/77 onwards	Y	
Towerrinning	TOWE	480708	6283950	50	West Arthur	12/77 onwards	Y	Y
Twin Swamps N-W	*TWIN*	*406569*	*6490122*	*50*	*Swan*	*7/79 – 11/84*		

Table 1 continued.

Wetland Name	Code	Easting	Northing	Zone	Local Government Authority	Period monitored	101 Current Wetlands	Intensively Monitored Wetlands
Unicup	UNIC	474399	6200082	50	Cranbrook	9/80 onwards	Y	
Varley	VARL	722520	6379843	50	Kulin	9/81 – 11/91, 4/00 onwards	Y	
Wagin 2088	*WAGI*	*533406*	*6312023*	*50*	*Wagin*	*7/82 – 5/85*		
Walbyring	WALB	555534	6355214	50	Wickepin	7/79 onwards	Y	
Wallering	*WALL*	*395706*	*6521624*	*50*	*Gingin*	*7/81 – 5/85*		
Walyormouring	WALY	488021	6554454	50	Goomalling	7/78 – 11/91, 9/97 onwards	Y	Y
Wannamal	WANN	409642	6556691	50	Gingin	7/78 onwards	Y	
Warden	WARD	396947	6257428	51	Esperance	11/79 onwards	Y	
Wardering	*WARG*	*523478*	*6290378*	*50*	*Woodanilling*	*5/78 – 11/91*		
Warrinup	WARR	523495	6199485	50	Cranbrook	3/80 onwards	Y	
West Arthur 5456	WEST	496510	6293047	50	West Arthur	8/80 – 11/91, 9/97 onwards	Y	
Wheatfield	WHEA	401069	6258818	51	Esperance	11/99 onwards	Y	Y
White (Albany)	*WHIA*	*606407*	*6152434*	*50*	*Albany*	*6/81 - 5/85, 9/98*		
White (Narrogin)	WHIN	542630	6347335	50	Narrogin	6/81 - 5/85, 9/97 onwards	Y	
White Water	WHIW	558770	6399914	50	Corrigin	6/81 - 11/91, 9/97 onwards	Y	
Wild Horse	*WILD*	*473739*	*6273448*	*50*	*West Arthur*	*6/81 - 5/85, 4/00*		
Wilson	WILS	382325	6189429	50	Manjimup	5/91 onwards	Y	
Yaalup	YAAL	647443	6263830	50	Kent	7/82 onwards	Y	Y
Yarnup	YARN	487368	6196543	50	Cranbrook	9/80 onwards	Y	
Yarra Yarra	YARR	379957	6726980	50	Carnamah	7/81 - 5/85, 9/97 onwards	Y	
Yealering	YEAL	558587	6393389	50	Wickepin	6/78 onwards	Y	
Yellilup	YELL	686899	6201353	50	Jerramungup	11/85 onwards	Y	
Yurine	*YURI*	*385171*	*6543598*	*50*	*Gingin*	*5/79 - 11/91*		

Notes:

1. Wetlands without official names at the commencement of monitoring are identified by Local Government Authority and Reserve Number (e.g. Albany 26385).
2. Coordinates (eastings and northings) are of depth gauge Bench Marks (local survey datums). These have been installed on higher ground at or near the edge of each monitored wetland, close to the depth gauge or gauge 'cluster' of that wetland. The accuracy of the coordinates of most (all coordinates except those highlighted in gray) were improved from approx ±100m to approx ±5m during 2008-09 by re-survey with hand-held GPS units (Garmin GPSmap 60Cx), using theWGS84 world datum, which for practical purposes equates to GDA94.
3. 'Period Monitored' is described by the first and last records, for any parameter, of discrete periods of monitoring.
4. Routine monitoring was conducted every second month (Jan, Mar, May, Jul, Sep, Nov) from May 1981 to May 1985 and twice-yearly (Sep, Nov) prior to and after that four-year period and, in the case of the '101 Current Wetlands' is ongoing.
5. A few wetlands (e.g. Forrestdale, Clifton) have been monitored more frequently than two-month intervals for varying periods.
6. '101 Current Wetlands' are the 101 SWWMP wetlands routinely monitored by the authors for surface water depth, salinity, pH and nutrients under the State Salinity Strategy. These include 25 intensively monitored wetlands.
7. 'Intensively Monitored Wetlands' are the 25 SWWMP wetlands being intensively monitored by other DEC scientific staff for potential changes in plant and animal communities, shallow groundwater levels and detailed water chemistry under the State Salinity Strategy. They are a subset of the '101 Current Wetlands'.
8. The remaining 51 SWWMP wetlands, all shown in *italics*, have been monitored under SWWMP at various times in the past, but are not currently being monitored, at least under SWWMP.
9. Beverley Lakes is also known as Yenyenning Lakes; Boyup Brook 18239 as Kulicup Swamp; Corrigin 12900 as Paperbark Swamp, Frasers Lake as Maisey's 1 or Maisey's A, Kent 29020 as East Lake Bryde and Mt Marshall 26687 as Wallambin North.
10. Taarblin North and Taarblin South refer to the northern and southern basins respectively of one wetland (Taarblin).

Table 2. Monitored wetlands by DEC Regions and Districts, with tenure and coordinates.

No.	DEC Region	No.	DEC District	No.	Wetland[1]	Tenure[2]	Coordinates (GDA94)[3]		
							Easting	Northing	Zone
1	Midwest	1	Geraldton	1	Hebitons	Private	345831	6806160	50
2	Midwest	2	Moora	1	**Blue Gum**[4]	Private	401231	6615183	50
3	*Midwest*	*3*	*Moora*	*2*	*Capamaura*[5]	*CCWA*	*393109*	*6691458*	*50*
4	Midwest	4	Moora	3	Crackers	CCWA	365586	6579519	50
5	Midwest	5	Moora	4	**Eganu**	CCWA	391567	6680556	50
6	*Midwest*	*6*	*Moora*	*5*	*Eneminga*	*CCWA*	*358697*	*6590178*	*50*
7	Midwest	7	Moora	6	Guraga	LGA	363476	6585412	50
8	Midwest	8	Moora	7	**Logue**	CCWA	321114	6695888	50
9	*Midwest*	*9*	*Moora*	*8*	*Pinjarrega*	*CCWA*	*395411*	*6670581*	*50*
10	*Midwest*	*10*	*Moora*	*9*	*Streets*	*Private*	*402493*	*6614985*	*50*
11	Midwest	11	Moora	10	Yarra Yarra	CCWA	379957	6726980	50
12	South Coast	1	Albany	1	Albany 26385	CCWA	606041	6148594	50
13	*South Coast*	*2*	*Albany*	*2*	*Albany 27157*	*CCWA*	*618826*	*6147490*	*50*
14	*South Coast*	*3*	*Albany*	*3*	*Angove*	*CCWA*	*605824*	*6132574*	*50*
15	*South Coast*	*4*	*Albany*	*4*	*Camel*	*CCWA*	*588040*	*6204777*	*50*
16	South Coast	5	Albany	5	Collets Road	CCWA	721678	6214392	50
17	*South Coast*	*6*	*Albany*	*6*	*Cranbrook 25812*	*CCWA*	*573707*	*6203482*	*50*
18	*South Coast*	*7*	*Albany*	*7*	*Gardner*	*CCWA*	*605828*	*6129943*	*50*
19	*South Coast*	*8*	*Albany*	*8*	*Gnowangerup 26264*	*CCWA*	*636100*	*6196278*	*50*
20	South Coast	9	Albany	9	Jerdacuttup	CCWA	246655	6241791	51
21	South Coast	10	Albany	10	Mettler	CCWA	646369	6172015	50
22	South Coast	11	Albany	11	Moates	CCWA	600908	6131536	50
23	South Coast	12	Albany	12	Pabelup South	CCWA	725800	6222286	50
24	South Coast	13	Albany	13	Pillenorup	CCWA	601412	6187773	50
25	*South Coast*	*14*	*Albany*	*14*	*Plantagenet 25386*	*CCWA*	*597710*	*6176617*	*50*
26	South Coast	15	Albany	15	**Pleasant View**	CCWA	608357	6145314	50
27	South Coast	16	Albany	16	Powell	CCWA	567497	6125091	50
28	*South Coast*	*17*	*Albany*	*17*	*White (Albany)*	*CCWA*	*606407*	*6152434*	*50*
29	South Coast	18	Albany	18	Yellilup	Private	686899	6201353	50
30	South Coast	19	Esperance	1	**Coomalbidgup**	LGA	349163	6267892	51
31	*South Coast*	*20*	*Esperance*	*2*	*Dundas 33113*	*CCWA*	*391998*	*6359382*	*51*
32	South Coast	21	Esperance	3	Esperance 26410	CCWA	304849	6265010	51
33	*South Coast*	*22*	*Esperance*	*4*	*Esperance 27768*	*CCWA*	*388786*	*6319769*	*51*
34	South Coast	23	Esperance	5	Esperance 27985	CCWA	385963	6309342	51
35	*South Coast*	*24*	*Esperance*	*6*	*Esperance 32128*	*CCWA*	*471131*	*6278515*	*51*
36	*South Coast*	*25*	*Esperance*	*7*	*Esperance 32776*	*CCWA*	*438276*	*6294610*	*51*
37	South Coast	26	Esperance	8	Gore	CCWA	363166	6263536	51
38	South Coast	27	Esperance	9	Mortijinup	CCWA	373710	6259469	51
39	South Coast	28	Esperance	10	Mount Le Grand	CCWA	419066	6240163	51
40	South Coast	29	Esperance	11	North Parriup	CCWA	281562	6250268	51
41	South Coast	30	Esperance	12	Shark	CCWA	394568	6263073	51
42	*South Coast*	*31*	*Esperance*	*13*	*Shaster*	*CCWA*	*287219*	*6250710*	*51*
43	South Coast	32	Esperance	14	Station	CCWA	402615	6259237	51
44	South Coast	33	Esperance	15	Warden	CCWA	396947	6257428	51
45	South Coast	34	Esperance	16	**Wheatfield**	CCWA	401069	6258818	51
46	South West	1	Blackwood	1	**Boyup Brook 18239**[6]	CCWA	469777	6257199	50
47	South West	2	Blackwood	2	Broadwater	CCWA	341176	6273426	50
48	South West	3	Blackwood	3	Davies	CCWA	318852	6211560	50
49	South West	4	Wellington	1	Egret	CCWA	379666	6314855	50
50	South West	5	Wellington	2	Harvey 12632	CCWA	386550	6348919	50
51	South West	6	Wellington	3	**Towerrinning**	CCWA	480708	6283950	50
52	*South West*	*7*	*Wellington*	*4*	*Wild Horse*	*CCWA*	*473739*	*6273448*	*50*
53	Swan	1	Perth Hills	1	Chandala	CCWA	400545	6514425	50
54	*Swan*	*2*	*Perth Hills*	*2*	*Chittering*	*CCWA*	*414089*	*6521328*	*50*
55	Swan	3	Perth Hills	3	Dobaderry	CCWA	463077	6437224	50
56	Swan	4	Perth Hills	4	Goonaping	CCWA	461797	6443309	50

Table 2 continued.

No.	DEC Region	No.	DEC District	No.	Wetland	Tenure	Coordinates (GDA94)		
							Easting	Northing	Zone
57	Swan	5	Swan Coastal	1	Bambun	CCWA	394880	6522829	50
58	Swan	6	Swan Coastal	2	Clifton	CCWA	374037	6376139	50
59	*Swan*	*7*	*Swan Coastal*	*3*	*Ellen Brook*	*CCWA*	*408739*	*6486519*	*50*
60	Swan	8	Swan Coastal	4	Forrestdale	CCWA	400062	6442240	50
61	Swan	9	Swan Coastal	5	Gibbs	CCWA	397627	6441667	50
62	*Swan*	*10*	*Swan Coastal*	*6*	*Gingin 31241*	*CCWA*	*387922*	*6525676*	*50*
63	Swan	11	Swan Coastal	7	Jandabup	CCWA	390937	6486982	50
64	Swan	12	Swan Coastal	8	Joondalup	CCWA	384352	6487445	50
65	*Swan*	*13*	*Swan Coastal*	*9*	*Karakin*	*CCWA*	*354428*	*6563848*	*50*
66	Swan	14	Swan Coastal	10	McLarty	CCWA	379489	6379596	50
67	*Swan*	*15*	*Swan Coastal*	*11*	*Mungala*	*CCWA*	*395151*	*6521364*	*50*
68	*Swan*	*16*	*Swan Coastal*	*12*	*Murray 24739*	*CCWA*	*378784*	*6382052*	*50*
69	*Swan*	*17*	*Swan Coastal*	*13*	*Nambung*	*CCWA*	*394607*	*6521821*	*50*
70	Swan	18	Swan Coastal	14	Nine Mile	CCWA	385536	6376505	50
71	Swan	19	Swan Coastal	15	Thomsons	CCWA	389516	6441482	50
72	*Swan*	*20*	*Swan Coastal*	*16*	*Twin Swamps N-W*	*CCWA*	*406569*	*6490122*	*50*
73	*Swan*	*21*	*Swan Coastal*	*17*	*Wallering*	*CCWA*	*395706*	*6521624*	*50*
74	Swan	22	Swan Coastal	18	Wannamal	CCWA	409642	6556691	50
75	*Swan*	*23*	*Swan Coastal*	*19*	*Yurine*	*CCWA*	*385171*	*6543598*	*50*
76	Warren	1	Donnelly	1	Byenup	CCWA	476449	6182437	50
77	Warren	2	Donnelly	2	Jasper	CCWA	379737	6190394	50
78	Warren	3	Donnelly	3	Maringup	CCWA	426553	6144690	50
79	Warren	4	Donnelly	4	Muir	CCWA	471032	6185028	50
80	Warren	5	Donnelly	5	**Noobijup**	CCWA	480867	6192653	50
81	Warren	6	Donnelly	6	Poorginup	CCWA	476447	6177128	50
82	*Warren*	*7*	*Donnelly*	*7*	*Red (Manjimup)*	*UCL*	*468592*	*6189580*	*50*
83	Warren	8	Donnelly	8	Tordit-Gurrup	CCWA	476135	6179406	50
84	Warren	9	Donnelly	9	Unicup	CCWA	474399	6200082	50
85	Warren	10	Donnelly	10	Wilson	CCWA	382325	6189429	50
86	Warren	11	Donnelly	11	Yarnup	CCWA	487368	6196543	50
87	Warren	12	Frankland	1	Boat Harbour 1	CCWA	508245	6124962	50
88	Warren	13	Frankland	2	Kwornicup	CCWA	538575	6176168	50
89	Warren	14	Frankland	3	Owingup	CCWA	507258	6126756	50
90	Wheatbelt	1	Avon-Mortlock	1	Beverley[6]	CCWA / LGA	514297	6432612	50
91	*Wheatbelt*	*2*	*Avon-Mortlock*	*2*	*Dowerin*	*CCWA*	*505689*	*6541494*	*50*
92	Wheatbelt	3	Avon-Mortlock	3	**Frasers**[6]	Private	507236	6542443	50
93	Wheatbelt	4	Avon-Mortlock	4	Goorly	Private	503350	6664801	50
94	Wheatbelt	5	Avon-Mortlock	5	Hinds	CCWA	456859	6596884	50
95	Wheatbelt	6	Avon-Mortlock	6	Ninan	CCWA	467029	6575597	50
96	Wheatbelt	7	Avon-Mortlock	7	Noonying	CCWA	542507	6497744	50
97	Wheatbelt	8	Avon-Mortlock	8	**Walyormouring**	CCWA	488021	6554454	50
98	*Wheatbelt*	*9*	*Great Southern*	*1*	*Ace*	*CCWA*	*758001*	*6344738*	*50*
99	Wheatbelt	10	Great Southern	2	**Altham**	CCWA	634562	6302593	50
100	Wheatbelt	11	Great Southern	3	Anderson	CCWA	588666	6217158	50
101	Wheatbelt	12	Great Southern	4	Atkins Yate	Private	750071	6330498	50
102	Wheatbelt	13	Great Southern	5	**Bennetts**	CCWA	742440	6314572	50
103	*Wheatbelt*	*14*	*Great Southern*	*6*	*Biddy*	*CCWA*	*682121*	*6344868*	*50*
104	*Wheatbelt*	*15*	*Great Southern*	*7*	*Bokan*	*CCWA*	*549253*	*6349883*	*50*
105	Wheatbelt	16	Great Southern	8	Brown	CCWA	559606	6397735	50
106	Wheatbelt	17	Great Southern	9	**Bryde**	CCWA	669625	6308051	50
107	*Wheatbelt*	*18*	*Great Southern*	*10*	*Cairlocup*	*CCWA*	*662520*	*6266817*	*50*
108	Wheatbelt	19	Great Southern	11	Casuarina	CCWA	569525	6277315	50
109	*Wheatbelt*	*20*	*Great Southern*	*12*	*Coblinine*	*CCWA*	*564568*	*6306209*	*50*
110	Wheatbelt	21	Great Southern	13	**Coomelberrup**	CCWA	573060	6303130	50
111	Wheatbelt	22	Great Southern	14	**Corrigin 12900**[6]	CCWA	603415	6413294	50
112	Wheatbelt	23	Great Southern	15	**Coyrecup**	CCWA	577072	6268374	50
113	Wheatbelt	24	Great Southern	16	Dulbinning	CCWA	557418	6359015	50

Table 2 continued.

No.	DEC Region	No.	DEC District	No.	Wetland	Tenure	Coordinates (GDA94)		
							Easting	Northing	Zone
114	Wheatbelt	25	Great Southern	17	**Dumbleyung**	CCWA / LGA	560071	6309876	50
115	Wheatbelt	26	Great Southern	18	Flagstaff	CCWA	523642	6291467	50
116	*Wheatbelt*	*27*	*Great Southern*	*19*	*Gnowangerup 26569*	*CCWA*	*636830*	*6257497*	*50*
117	*Wheatbelt*	*28*	*Great Southern*	*20*	*Gounter*	*CCWA*	*672997*	*6413190*	*50*
118	*Wheatbelt*	*29*	*Great Southern*	*21*	*Gundaring*	*CCWA*	*546974*	*6315587*	*50*
119	Wheatbelt	30	Great Southern	22	Kent 29020[6]	CCWA	676818	6307259	50
120	*Wheatbelt*	*31*	*Great Southern*	*23*	*Kondinin*	*CCWA*	*612045*	*6404002*	*50*
121	*Wheatbelt*	*32*	*Great Southern*	*24*	*Kwobrup*	*Private*	*593500*	*6267648*	*50*
122	Wheatbelt	33	Great Southern	25	Little White	CCWA	541357	6347281	50
123	Wheatbelt	34	Great Southern	26	Martinup	CCWA	516363	6289934	50
124	Wheatbelt	35	Great Southern	27	Mears	CCWA	533098	6433941	50
125	*Wheatbelt*	*36*	*Great Southern*	*28*	*Miripin*	*CCWA*	*518297*	*6288850*	*50*
126	*Wheatbelt*	*37*	*Great Southern*	*29*	*Murapin*	*CCWA*	*517769*	*6289522*	*50*
127	Wheatbelt	38	Great Southern	30	Ngopitchup	WRC	531747	6242644	50
128	*Wheatbelt*	*39*	*Great Southern*	*31*	*Nonalling*	*CCWA*	*557389*	*6400285*	*50*
129	*Wheatbelt*	*40*	*Great Southern*	*32*	*Pallarup*	*CCWA*	*756890*	*6322415*	*50*
130	Wheatbelt	41	Great Southern	33	**Parkeyerring**	CCWA	533156	6307263	50
131	*Wheatbelt*	*42*	*Great Southern*	*34*	*Queerearrup*	*LGA*	*521251*	*6291518*	*50*
132	Wheatbelt	43	Great Southern	35	Range Road Yate	MWR	666083	6275186	50
133	Wheatbelt	44	Great Southern	36	**Ronnerup**	CCWA	744169	6317786	50
134a	Wheatbelt	45a	Great Southern	37a	Taarblin North	CCWA	552350	6355668	50
134b	Wheatbelt	45b	Great Southern	38b	Taarblin South	CCWA	551258	6350395	50
135	Wheatbelt	46	Great Southern	38	**Toolibin**	CCWA	557650	6357248	50
136	Wheatbelt	47	Great Southern	39	Varley	CCWA	722520	6379843	50
137	*Wheatbelt*	*48*	*Great Southern*	*40*	*Wagin 2088*	*CCWA*	*533406*	*6312023*	*50*
138	Wheatbelt	49	Great Southern	41	Walbyring	CCWA	555534	6355214	50
139	*Wheatbelt*	*50*	*Great Southern*	*42*	*Wardering*	*CCWA*	*523478*	*6290378*	*50*
140	Wheatbelt	51	Great Southern	43	Warrinup	CCWA	523495	6199485	50
141	Wheatbelt	52	Great Southern	44	West Arthur 5456	CCWA	496510	6293047	50
142	Wheatbelt	53	Great Southern	45	White (Narrogin)	CCWA	542630	6347335	50
143	Wheatbelt	54	Great Southern	46	White Water	CCWA	558770	6399914	50
144	Wheatbelt	55	Great Southern	47	**Yaalup**	CCWA	647443	6263830	50
145	Wheatbelt	56	Great Southern	48	Yealering	LGA	558587	6393389	50
146	Wheatbelt	57	Yilgarn	1	**Ardath**	CCWA	609068	6448377	50
147	*Wheatbelt*	*58*	*Yilgarn*	*2*	*Bruce Rock 30969*	*CCWA*	*575133*	*6473941*	*50*
148	Wheatbelt	59	Yilgarn	3	**Campion**	CCWA	627676	6554227	50
149	*Wheatbelt*	*60*	*Yilgarn*	*4*	*Cronin*	*CCWA*	*760181*	*6413851*	*50*
150	*Wheatbelt*	*61*	*Yilgarn*	*5*	*Mollerin*	*CCWA*	*554171*	*6625441*	*50*
151	*Wheatbelt*	*62*	*Yilgarn*	*6*	*Mount Marshall 26687*[6]	*CCWA*	*560956*	*6579662*	*50*
152	Wheatbelt	63	Yilgarn	7	Red (Bruce Rock)	CCWA	602548	6437065	50

Notes:

1. Wetlands without official names at the commencement of monitoring are identified by Local Government Authority and Reserve Number, e.g. Albany 26385.
2. CCWA (Conservation Commission of Western Australia); LGA (Local Government Authority); MWR (Minister for Water Resources); UCL (Unallocated Crown Land); WRC (Water & Rivers Commission). DEC has management responsibility for wetlands vested in CCWA.
3. Coordinates (eastings and northings) are of depth gauge Bench Marks (local datums). The accuracy of most coordinates (all except those highlighted in gray) was improved from approx ±100m to approx ±5m during 2008-09.
4. Wetlands shown in **bold** are in the group of 25 intensively-monitored wetlands (see Note 7 of Table 1).
5. In addition to the 101 SWWMP wetlands currently being monitored under the State Salinity Strategy there are 51 SWWMP wetlands that have been monitored at some time in the past, but are not currently being monitored under SWWMP. These 51 are shown above in *italics*.
6. Beverley Lakes is also known as Yenyenning Lakes, Boyup Brook 18239 as Kulicup Swamp; Corrigin 12900 as Paperbark Swamp, Frasers Lake as Maisey's 1 or Maisey's A, Kent 29020 as East Lake Bryde and Mt Marshall 26687 as Wallambin North.

Table 3. Number of current and historically-monitored wetlands in each DEC Region and District.

DEC Region (Current, historical)	DEC District	Current	Historical
Midwest (7, 4)	Geraldton	1	0
	Moora	6	4
South Coast (21, 13)	Albany	10	8
	Esperance	11	5
South West (6, 1)	Blackwood	3	0
	Wellington	3	1
Swan (13, 10)	Perth Hills	3	1
	Swan Coastal	10	9
Warren (13, 1)	Donnelly	10	1
	Frankland	3	0
Wheatbelt (41, 22)	Avon-Mortlock	7	1
	Great Southern	31	17
	Yilgarn	3	4
Totals (101, 51)		**101**	**51**

The locations of DEC Regional and District Headquarters are, in most instances, not obvious from Region or District names, and are therefore listed below, for the convenience of readers.

DEC Region / District	HQ Location
Midwest /	Geraldton
Geraldton	Geraldton
Moora	Jurien Bay
South Coast /	Albany
Albany	Albany
Esperance	Esperance
South West /	Bunbury
Blackwood	Busselton
Wellington	Collie
Swan /	Bentley
Perth Hills	Mundaring
Swan Coastal	Wanneroo
Warren /	Manjimup
Donnelly	Pemberton
Frankland	Walpole
Wheatbelt /	Narrogin
Avon-Mortlock	Northam
Great Southern	Narrogin
Yilgarn	Merredin

Table 4. Ramsar and Directory Sites of south-western Australia, and their SWWMP wetlands.

A. Ramsar Sites (each contains one or more Directory Site).

Ramsar Site	Directory Site	SWWMP wetland
Becher Point Wetlands	Becher Point Wetlands	-
Forrestdale & Thomsons Lakes	Forrestdale Lake	Forrestdale
	Thomsons Lake	Thomsons
Lake Gore	Lake Gore System	Gore
Muir-Byenup System	(southern part of) Byenup Lagoon System	Byenup, Poorginup, Tordit-Gurrup
	Lake Muir	Muir
Peel-Yalgorup System	Yalgorup Lakes System	Clifton
	Lake McLarty System	McLarty, *Murray 24739*
Toolibin Lake	Toolibin Lake	**Toolibin**
Vasse-Wonnerup System	Vasse-Wonnerup Wetland System	-
Lake Warden System	Lake Warden System	Station, Warden, **Wheatfield**
		13 Current *1 Historical*

B. Other Directory Sites (not within Ramsar Sites).

Directory Site	SWWMP wetland
Balicup Lake System	*Camel*
Barraghup Swamp	-
Benger Swamp	-
Booragoon Lake	-
Brixton Street Swamps	-
Lake Bryde – East Lake Bryde	**Bryde**, Kent 29020
(northern part of) Byenup Lagoon System	**Noobijup**, Unicup, Yarnup
Cape Leeuwin System	-
Chandala Swamp	Chandala
Chittering-Needonga Lakes	*Chittering*
Coyrecup Lake	**Coyrecup**
Lake Cronin	*Cronin*
Doggerup Creek System	-
Dumbleyung Lake	**Dumbleyung**
Ellen Brook Swamps System	*Ellen Brook, Twin Swamps N-W*
Gibbs Road Swamp System	Gibbs
Gingilup-Jasper Wetland System	Jasper, Wilson
Lake Grace System	**Altham**
Guraga Lake	Guraga
Herdsman Lake	-
Hutt Lagoon System	-
Joondalup Lake	Joondalup
Karakin Lakes	*Karakin*
Lancelin Defence Training Area (Cwlth)	-
Lake Logue-Indoon System	**Logue**
Maringup Lake	Maringup
McCarley's Swamp (Ludlow Swamp)	-
Loch McNess System	-
Moates Lake System	Moates, *Angove, Gardner*
Mortijinup Lake System	Mortijinup
Mount Soho Swamps	-
Owingup Swamp System	Boat Harbour 1, Owingup
Palmer Barracks, Guildford (Cwlth)	-
Perth Airport Woodland Swamps (Cwlth)	-
Pink Lake	-
Lake Pleasant View System	Albany 26385, **Pleasant View**
RAAF Caversham (Cwlth)	-
Rottnest Island Lakes	-
Spectacles Swamp	-
Lake Thetis	-
Wannamal Lakes System	Wannamal
Yealering Lakes System	Brown, White Water, Yealering, *Nonalling*
Yellilup Yate Swamp System	Yellilup
Yorkrakine Rock Pools	-
	27 Current *9 Historical*

Nine south-western Australian Directory Sites are not listed in Tables 4A or 4B, because they are essentially riverine or estuarine and do not contain SWWMP-monitored wetlands. They are Peel-Harvey Estuary (part of Peel-Yalgorup Ramsar Site), Avon River Valley, Blackwood River (Lower Reaches) and Tributaries, Broke Inlet System, Culham Lake System, Fitzgerald Inlet System, Murchison River (Lower Reaches), Oyster Harbour and Swan-Canning Estuary.

Wetlands shown in *italics* in the adjoining Tables have been monitored in the past under SWWMP, but are not currently.

Wetlands shown in **bold** are in the group of 25 intensively-monitored wetlands (see Note 7 of Table 1).

Table 5. Natural Diversity Recovery Catchments and their SWWMP wetlands.

Natural Diversity Recovery Catchment	DEC Region	DEC District	SWWMP-monitored wetlands
Lake Bryde	Wheatbelt	Great Southern	**Bryde**, Kent 29020
Buntine-Marchagee	Wheatbelt	Avon-Mortlock	-
Drummond	Swan	Perth Hills	-
Esperance Lakes	South Coast	Esperance	Shark, Station, Warden, **Wheatfield**
Muir-Unicup	Warren	Donnelly	Byenup, Muir, **Noobijup**, Poorginup, Tordit-Gurrup, Unicup, Yarnup, *Red (Manjimup)*
Toolibin Lake	Wheatbelt	Great Southern	Dulbinning, Taarblin, **Toolibin**, Walbyring
			17 Current *1 Historical*

Notes:

1. Kent 29020 is also known as East Lake Bryde
2. Taarblin has two basins, north and south. Both are monitored.
3. *Red (Manjimup)* has been monitored in the past under SWWMP, but is not currently.
4. Most of the wetlands listed above, and some others not listed, are also monitored under Recovery Catchment programs. Nonetheless it is considered important to continue the twice-yearly routine monitoring under SWWMP, which in all cases pre-dates the establishment of the Natural Diversity Recovery Catchments and their programs.
5. Wetlands shown in **bold** are in the group of 25 intensively-monitored wetlands (see Note 7 of Table 1).

GRAPHS

The following graphs of water depth (at the deepest location in each wetland), pH, salinity, Total Phosphorus and Total Nitrogen are arranged in the same order (alphabetical by wetland name) as in Table 1.

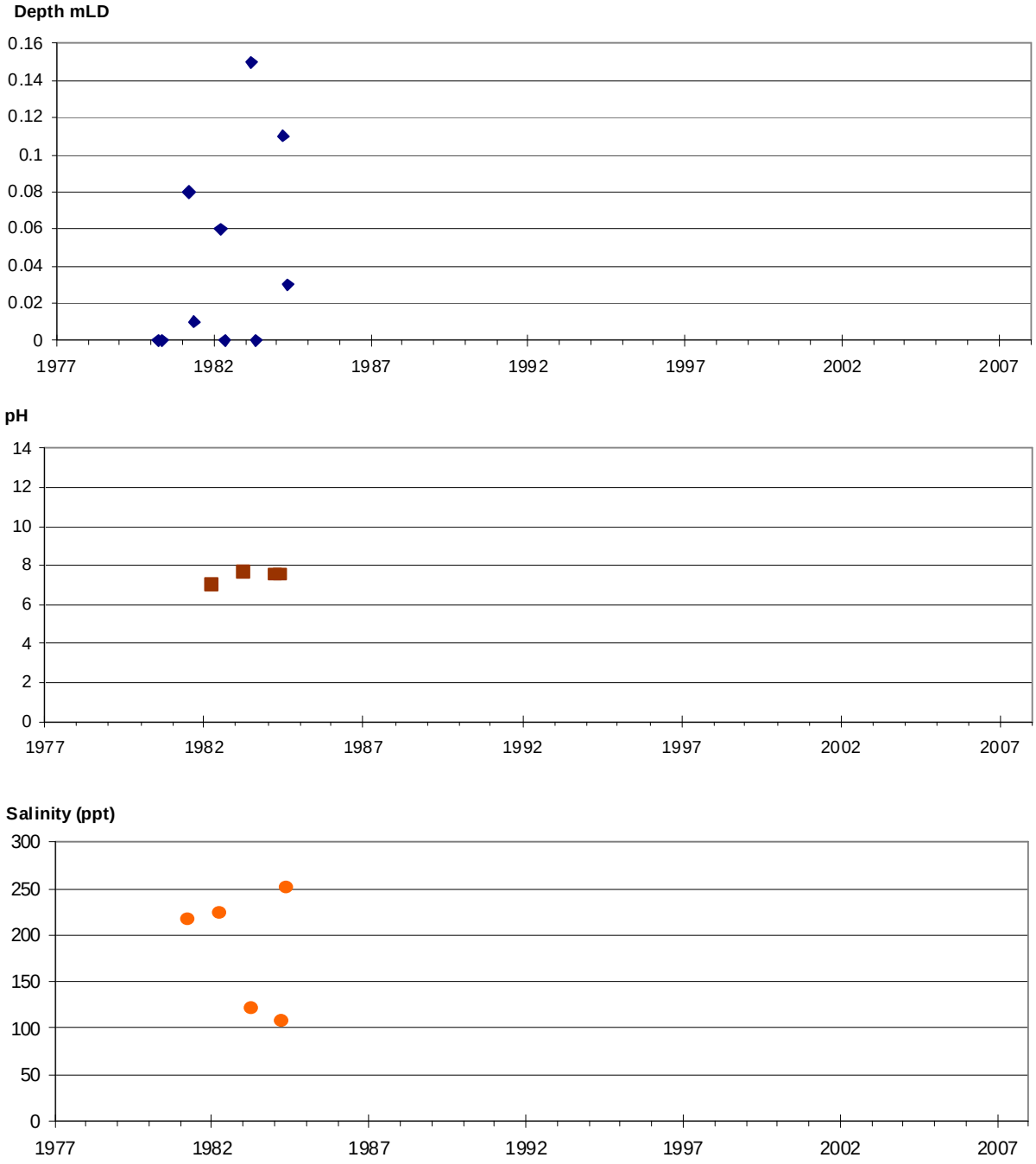
Data from 152 wetlands are displayed. These comprise 101 SWWMP wetlands currently monitored under the State Salinity Strategy (25 of which are also intensively monitored for other attributes by other DEC scientific staff) and an additional 51 SWWMP wetlands monitored for varying periods in the past.

The name of each wetland is followed by letters indicating whether the wetland is currently monitored (C) or historical (H) and if intensively monitored (IM).

Listing as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands (Government of Western Australia 1990, 2000; Wetlands International 2002) and listing in 'A Directory of Important Wetlands in Australia' (Environment Australia 2001) is indicated where this is the case.

Inclusion in Natural Diversity Recovery Catchments (Government of Western Australia 1996a; Wallace & Lloyd 2008) is also indicated where appropriate.

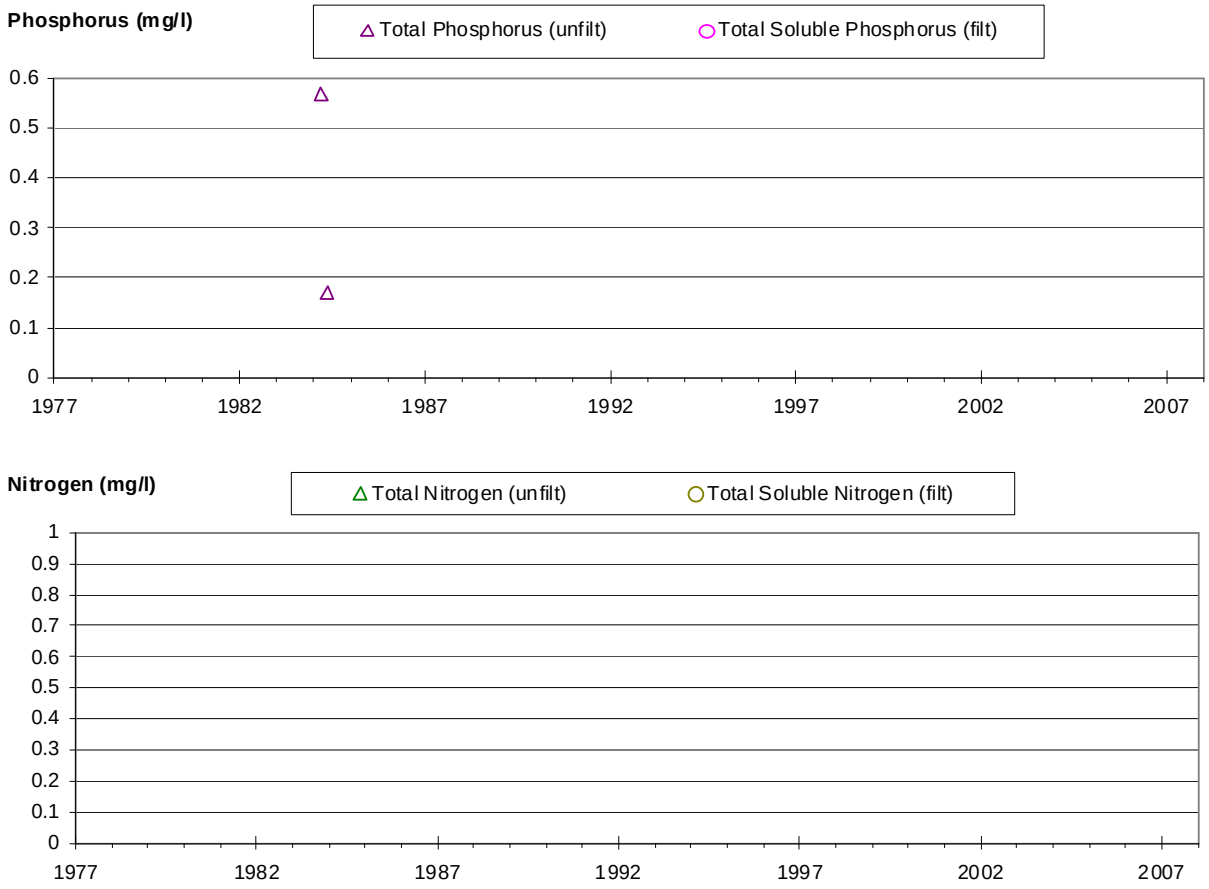
ACE (H)



Notes:

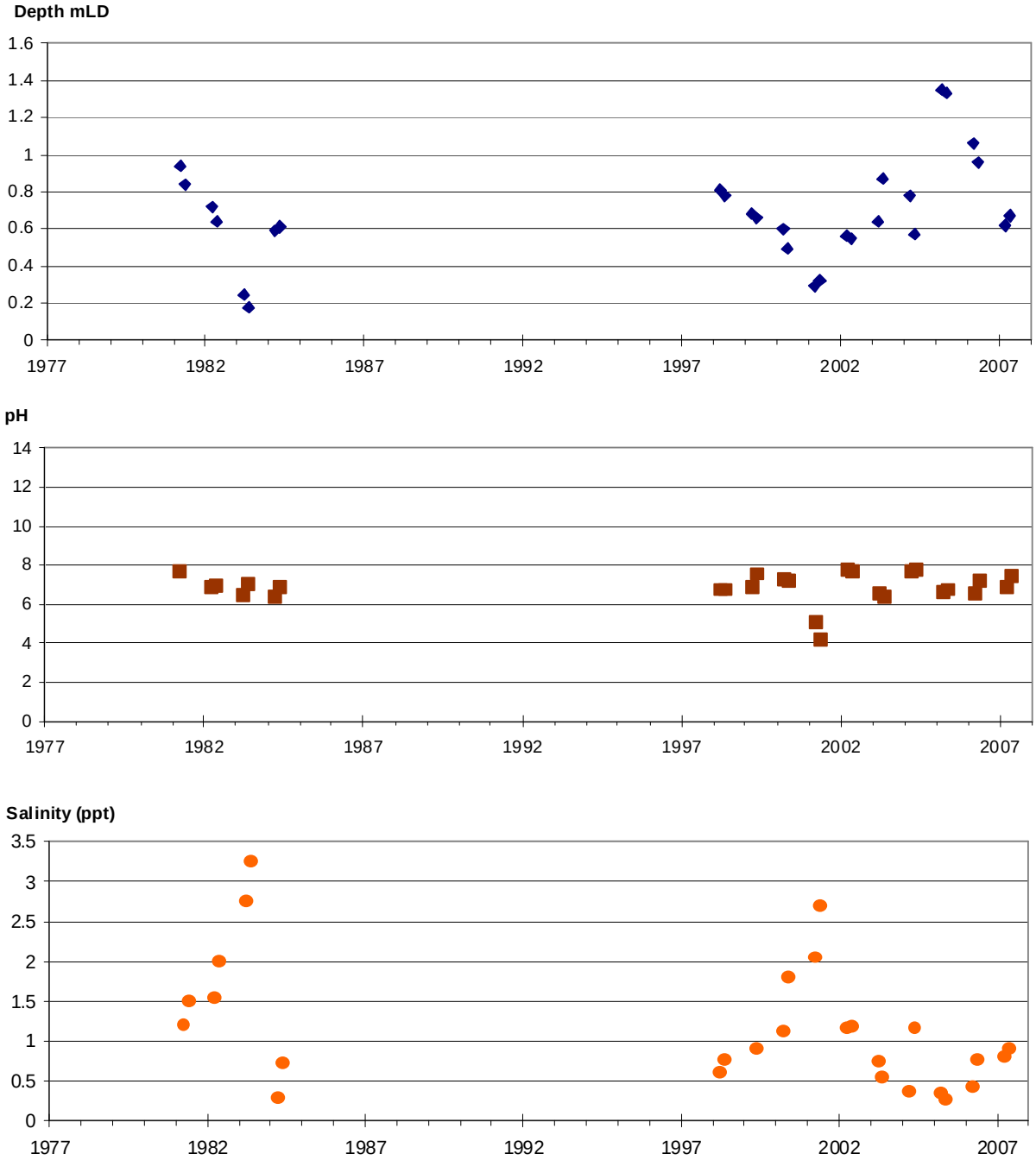
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

ACE



Ace is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

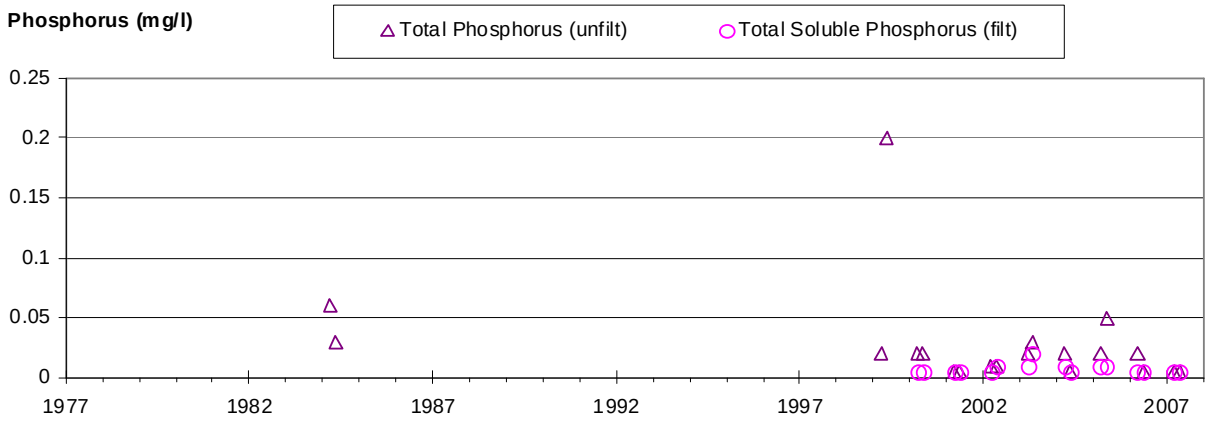
ALBANY 26385 (C)

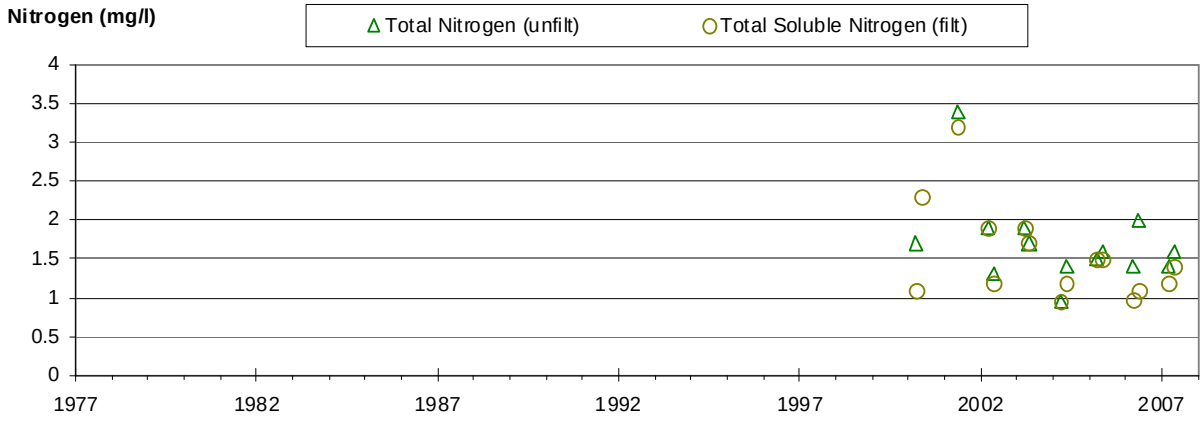


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

ALBANY 26385

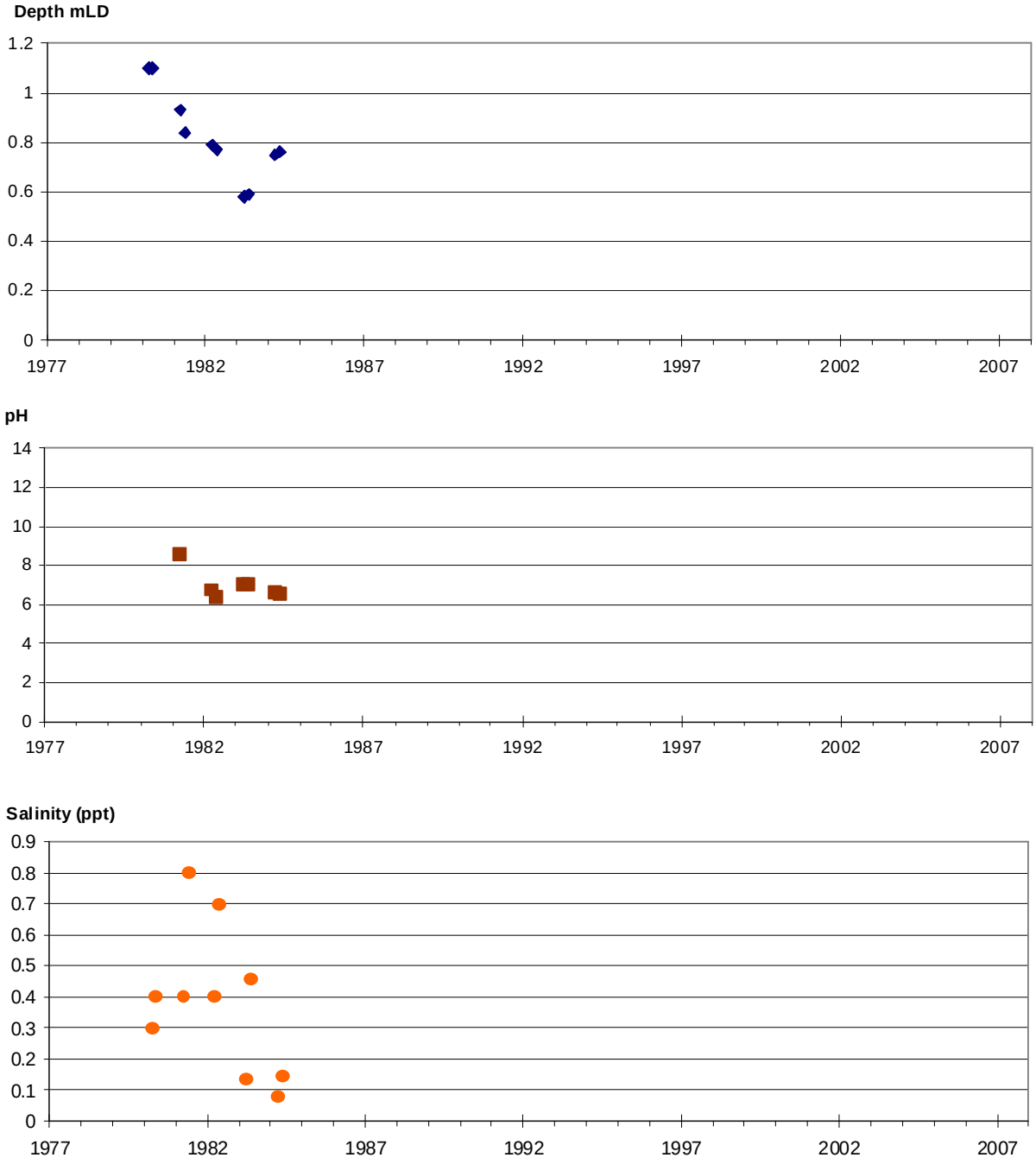




Albany 26385 is a component of the 'Lake Pleasant View System', which is listed in the 'Directory of Important Wetlands in Australia'.

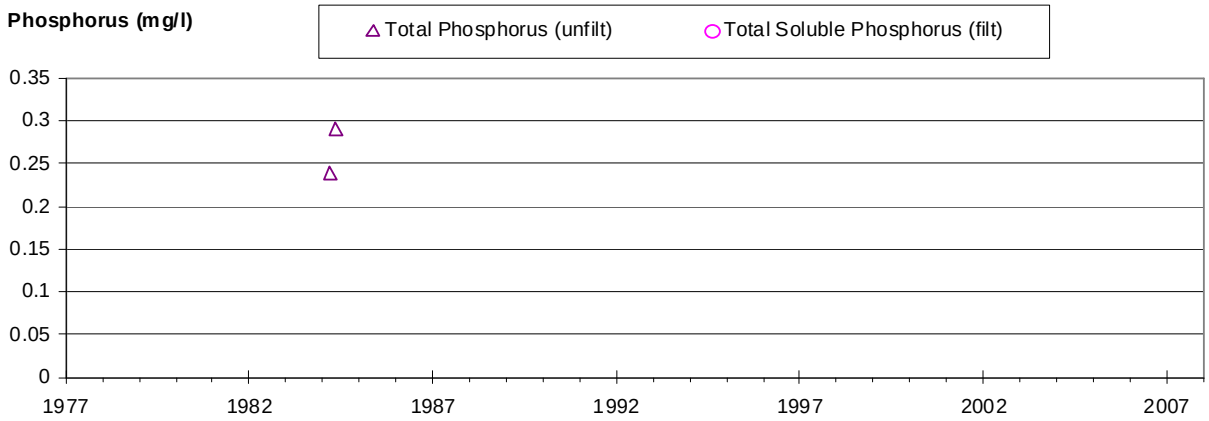
Albany 26385 is in the Albany District of the South Coast DEC Region

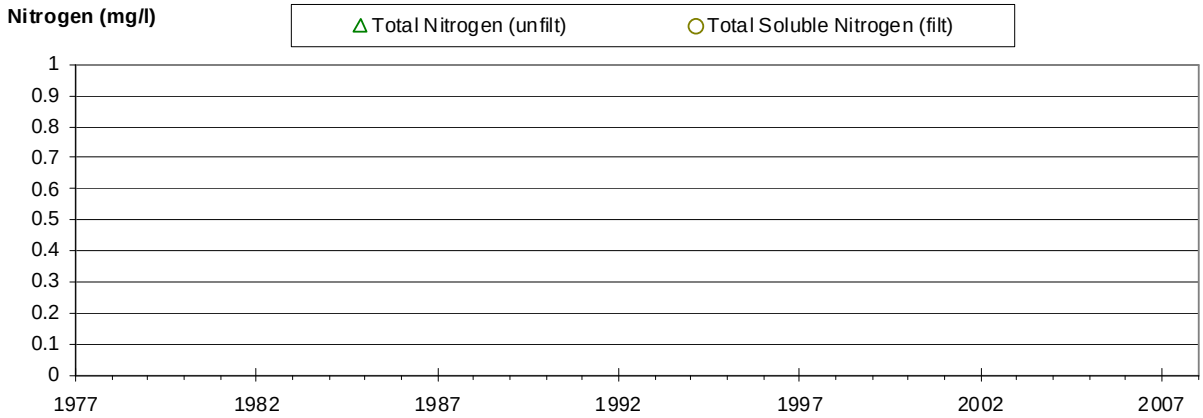
ALBANY 27157 (H)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

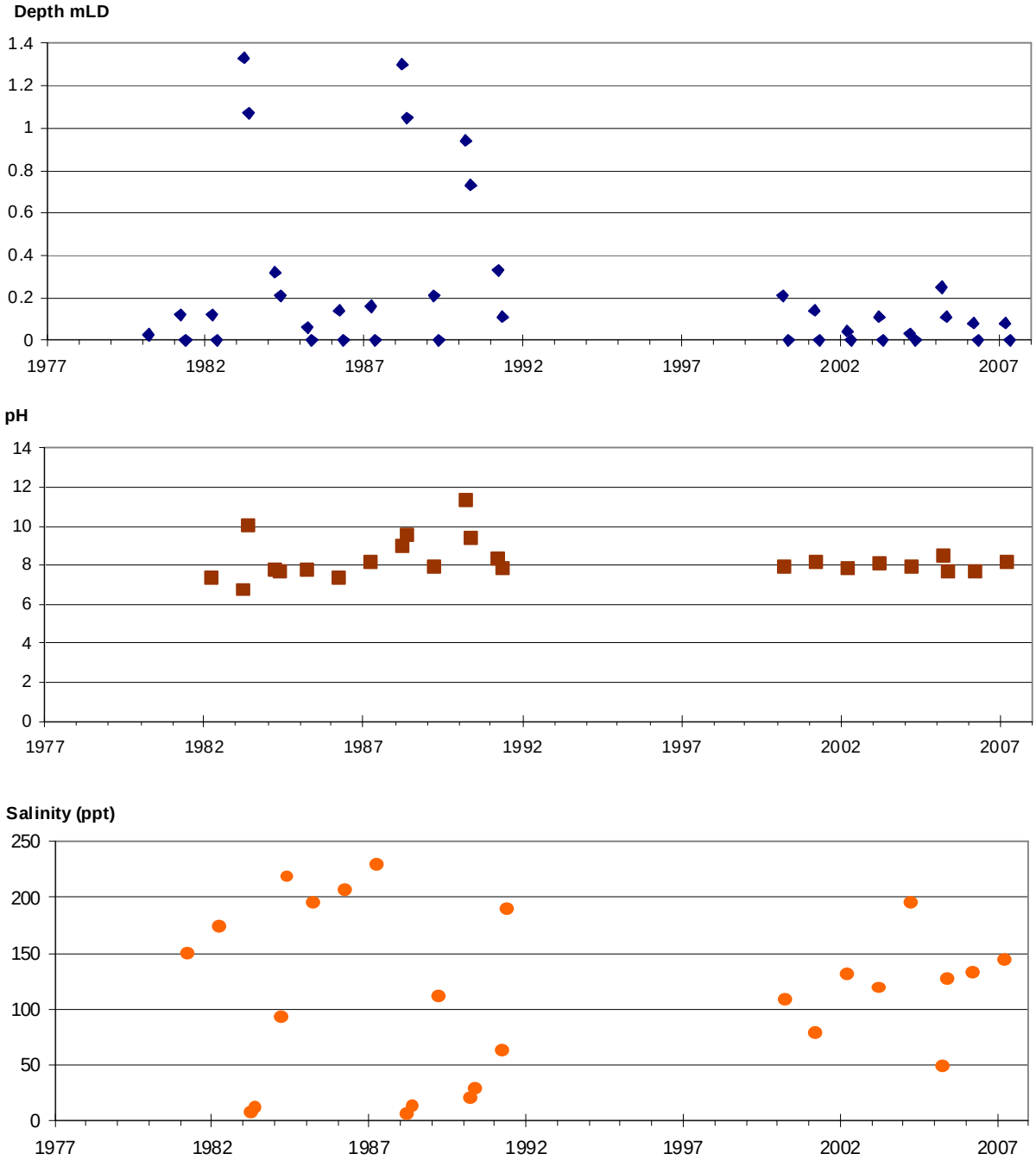
ALBANY 27157





Albany 27157 is in the Albany District of the South Coast DEC Region

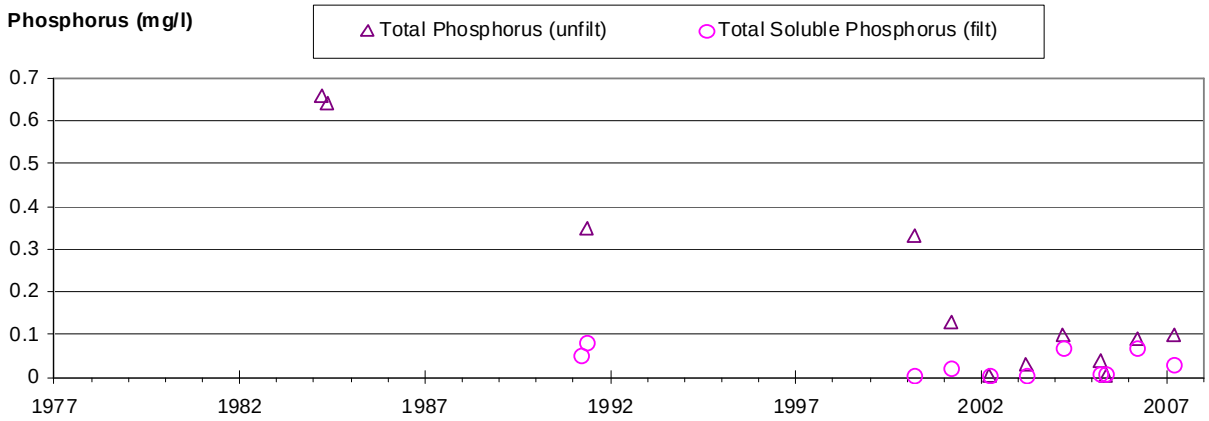
ALTHAM (C, IM)

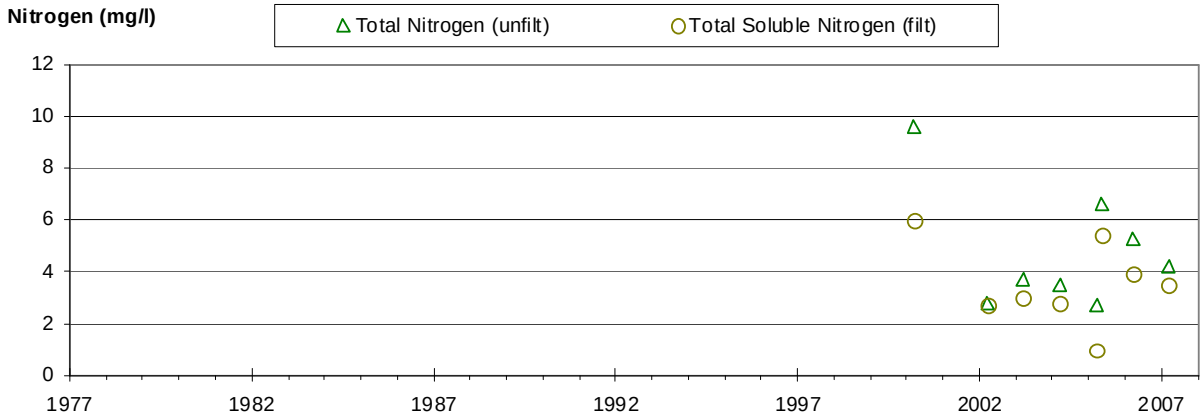


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

ALTHAM

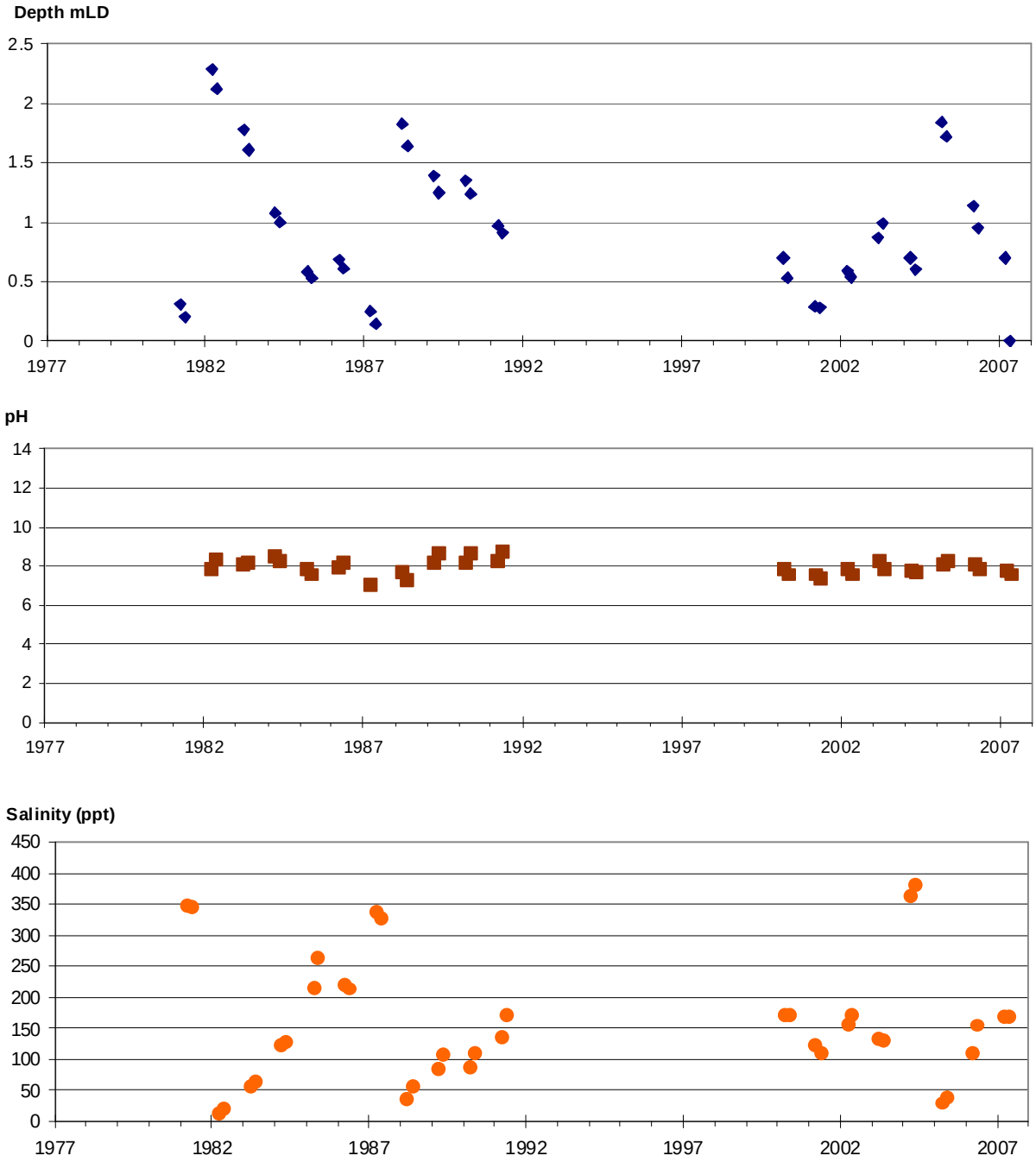




Altham is a component of the 'Lake Grace System', which is listed in the 'Directory of Important Wetlands in Australia'.

Altham is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

ANDERSON (C)



Notes:

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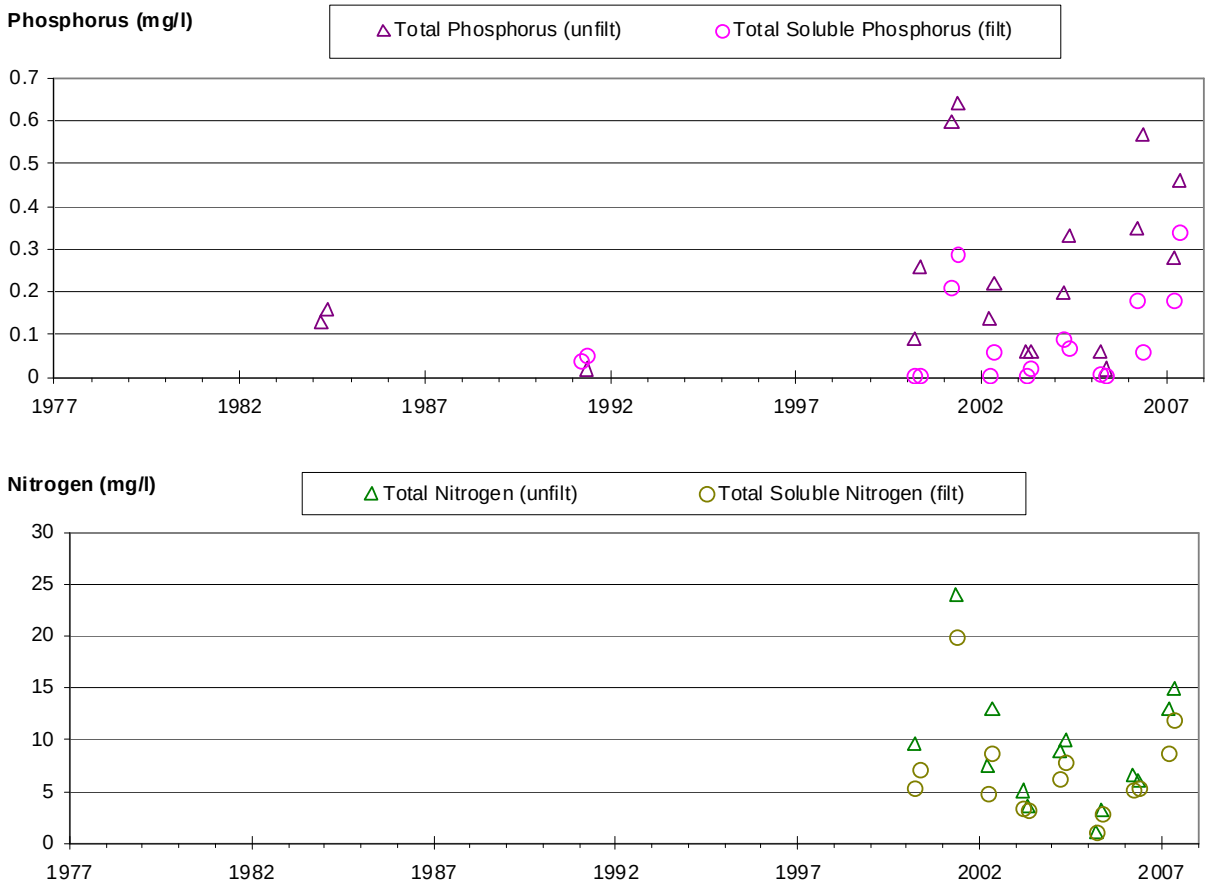
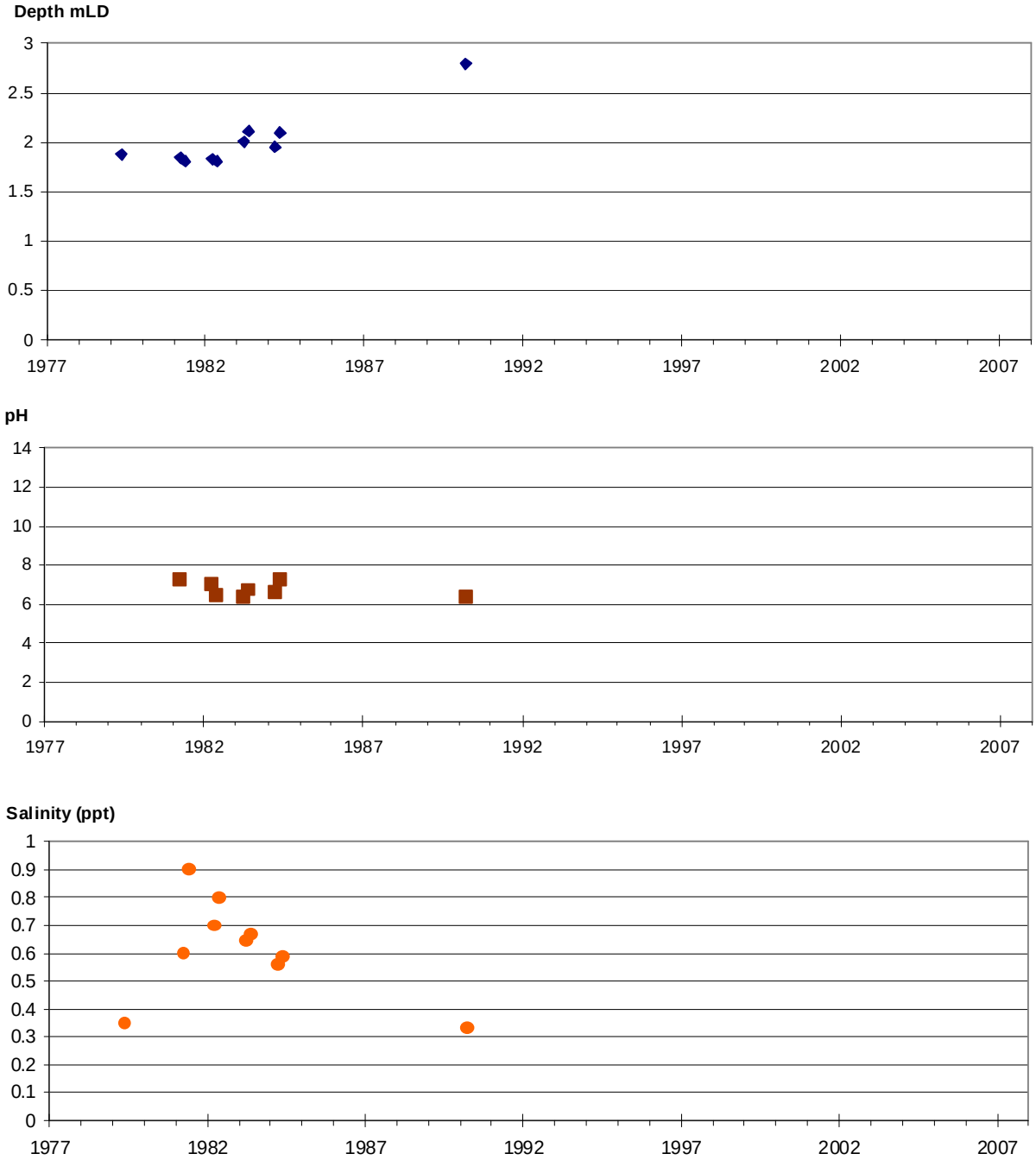
2. Data are from September and November routine monitoring periods only.

ANDERSON



Anderson is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

ANGOVE (H)



Notes:

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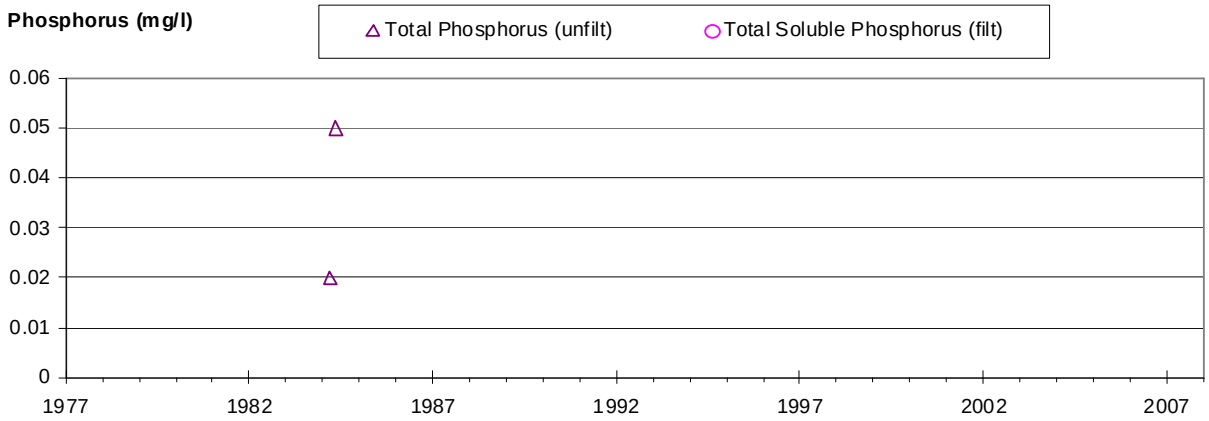
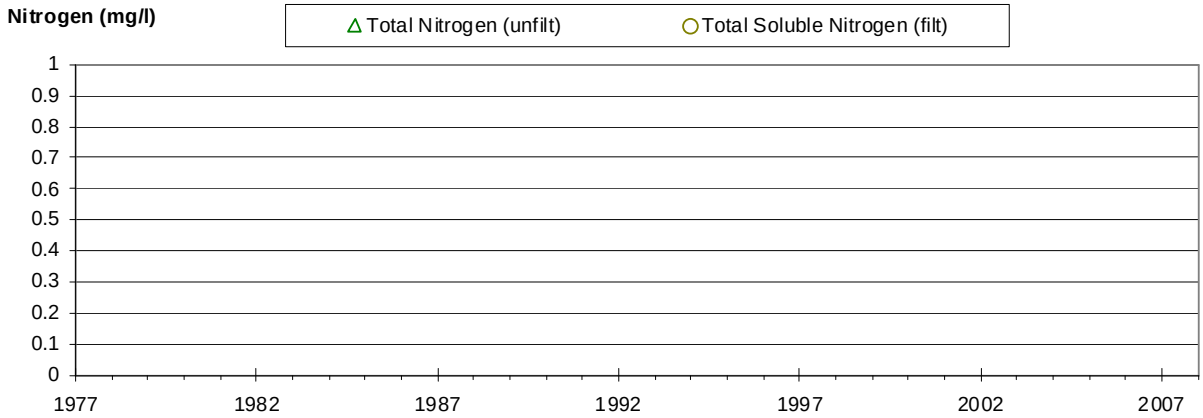
ANGOVE

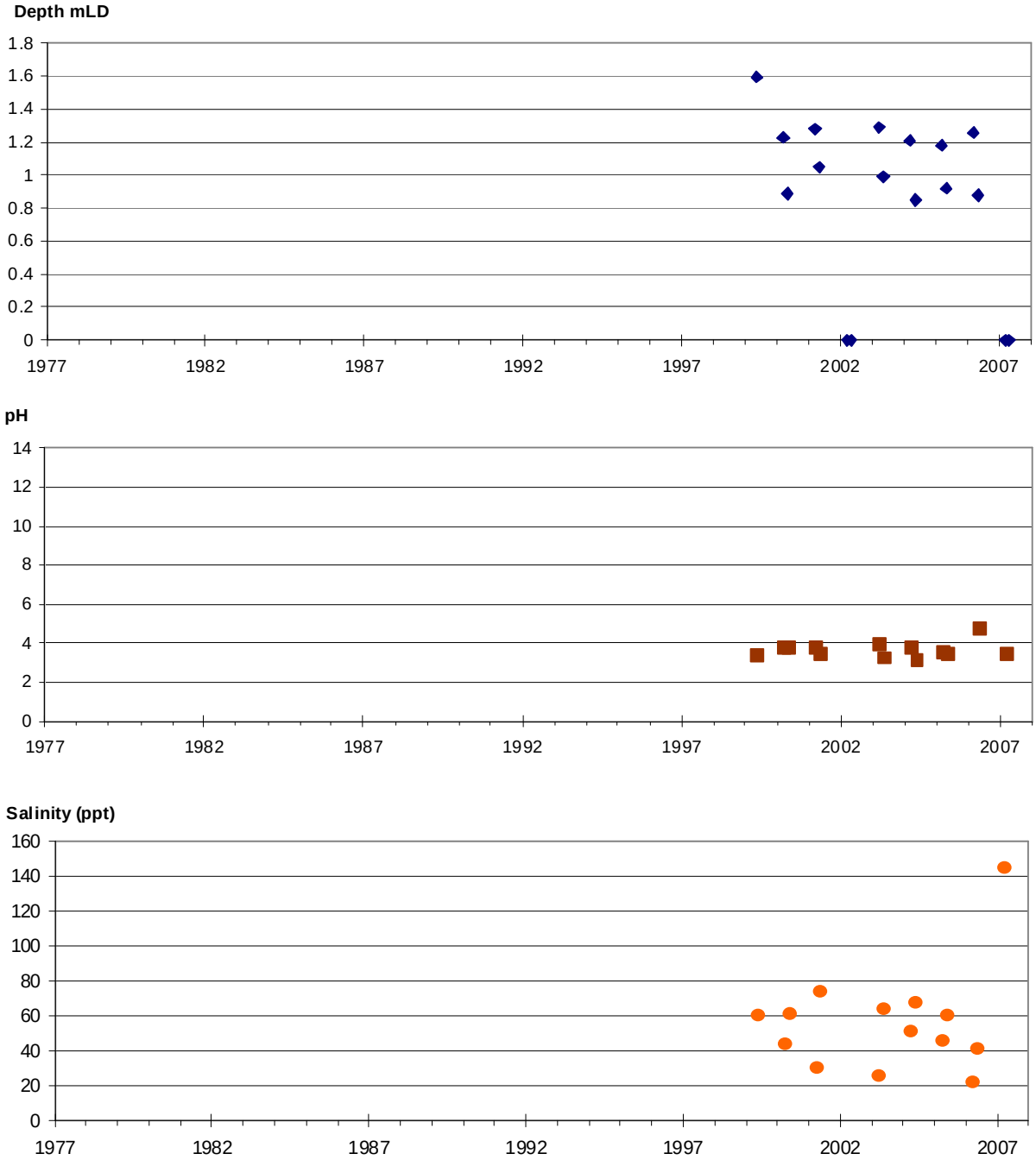




Angove is a component of the 'Moates Lake System', which is listed in the 'Directory of Important Wetlands in Australia'.

Angove is in the Albany District of the South Coast DEC Region

ARDATH (C, IM)



Notes:

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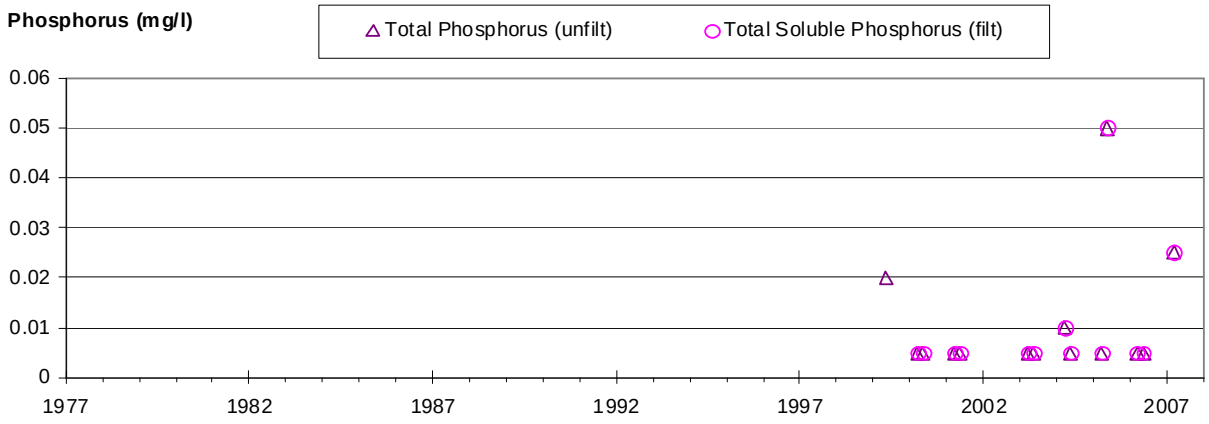
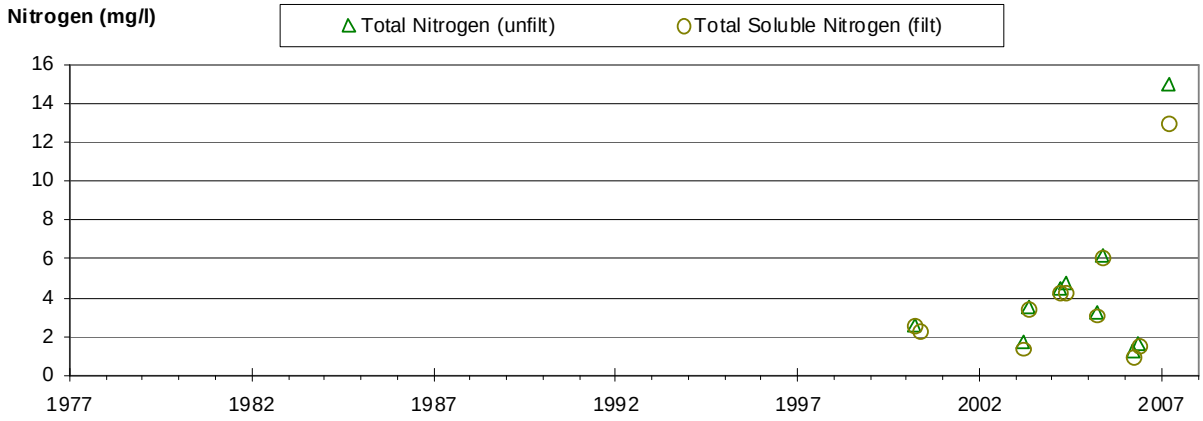
2. Data are from September and November routine monitoring periods only.

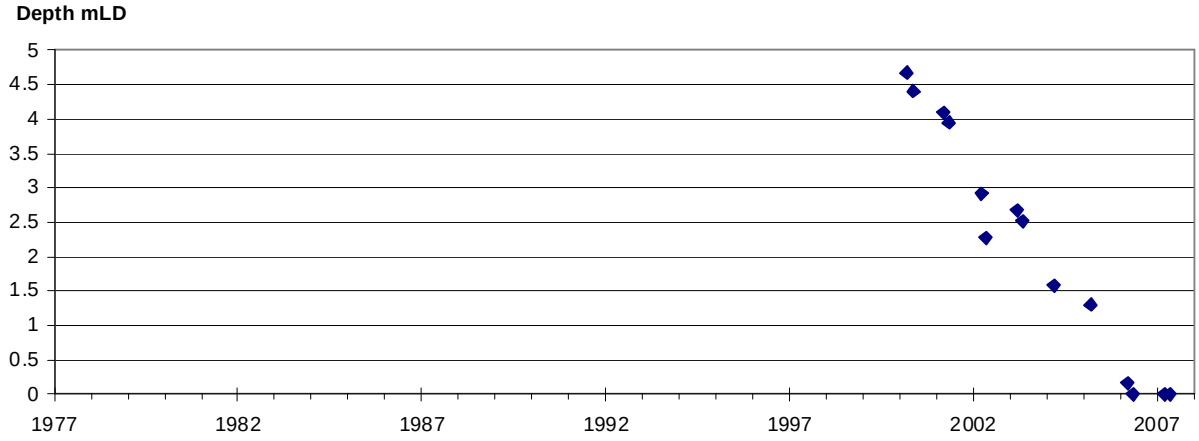
ARDATH

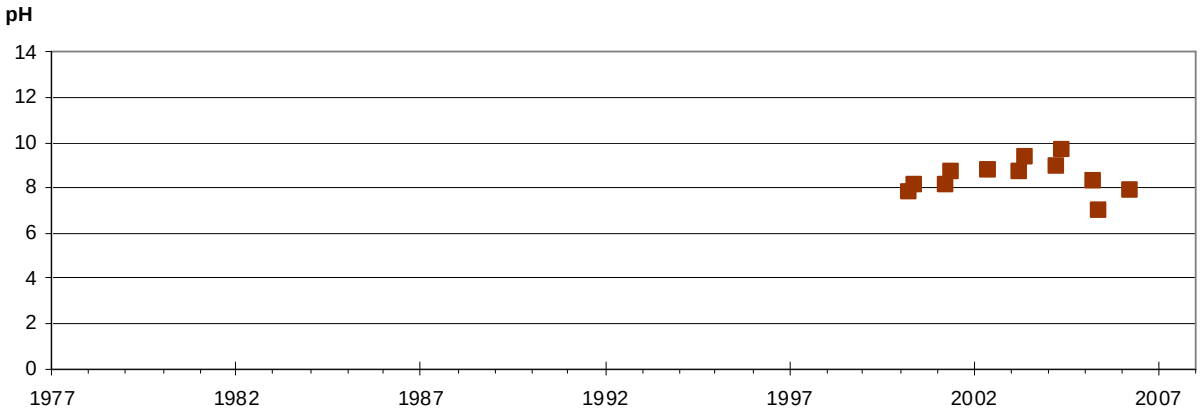


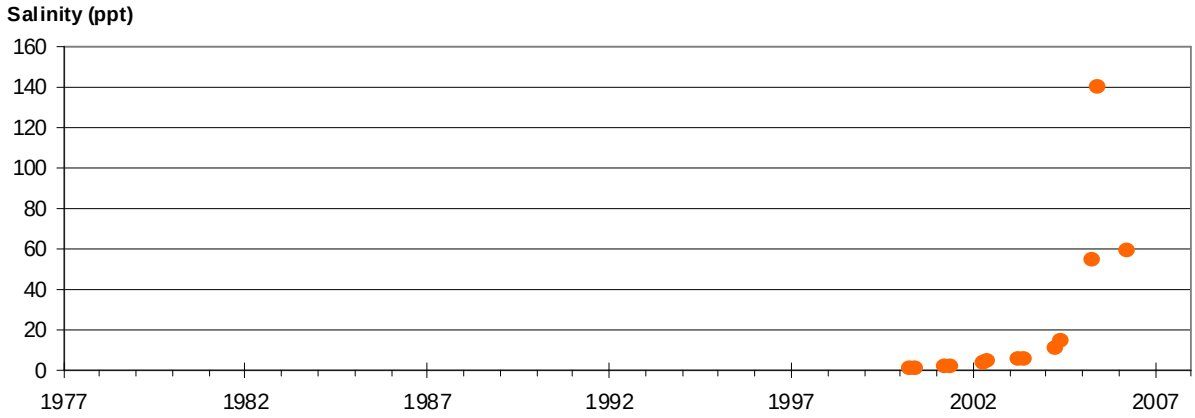


Ardath is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

ATKINS YATE (C)

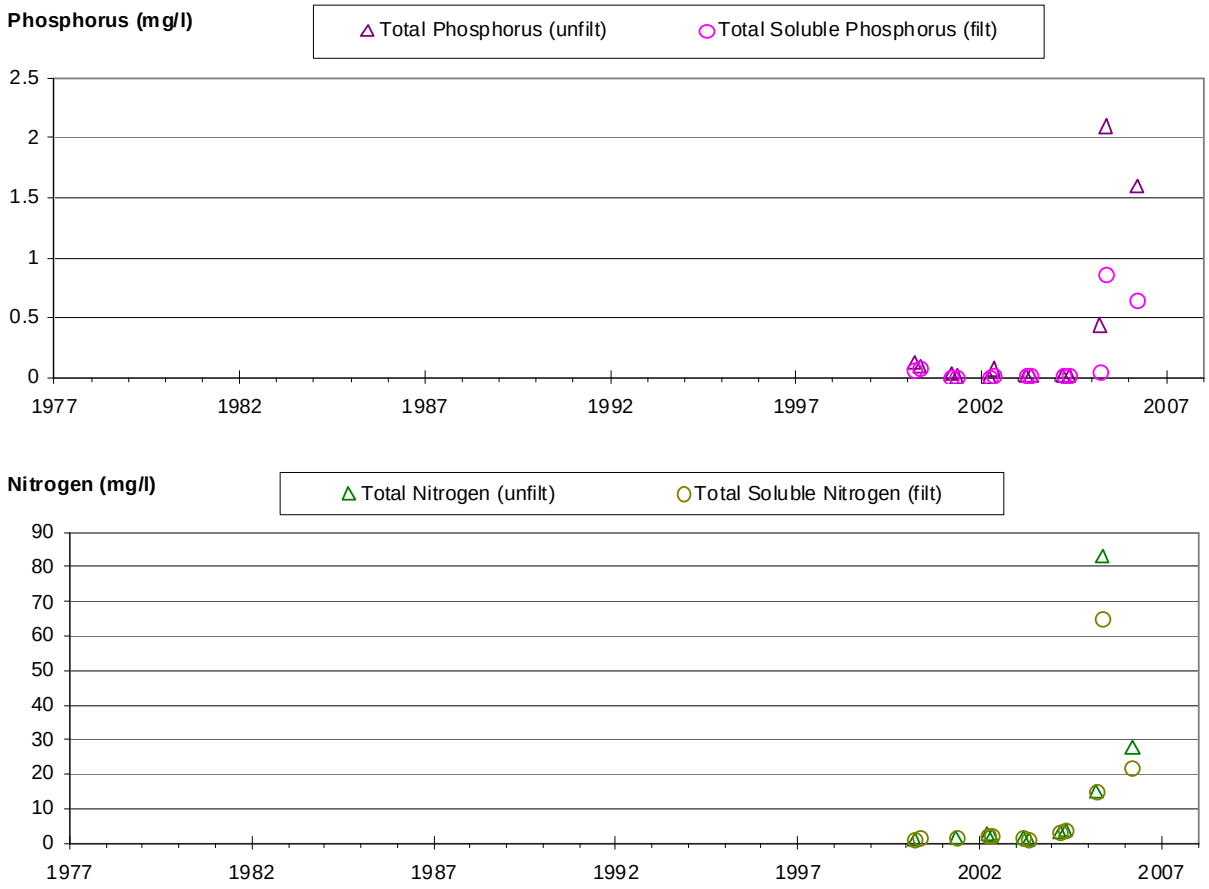






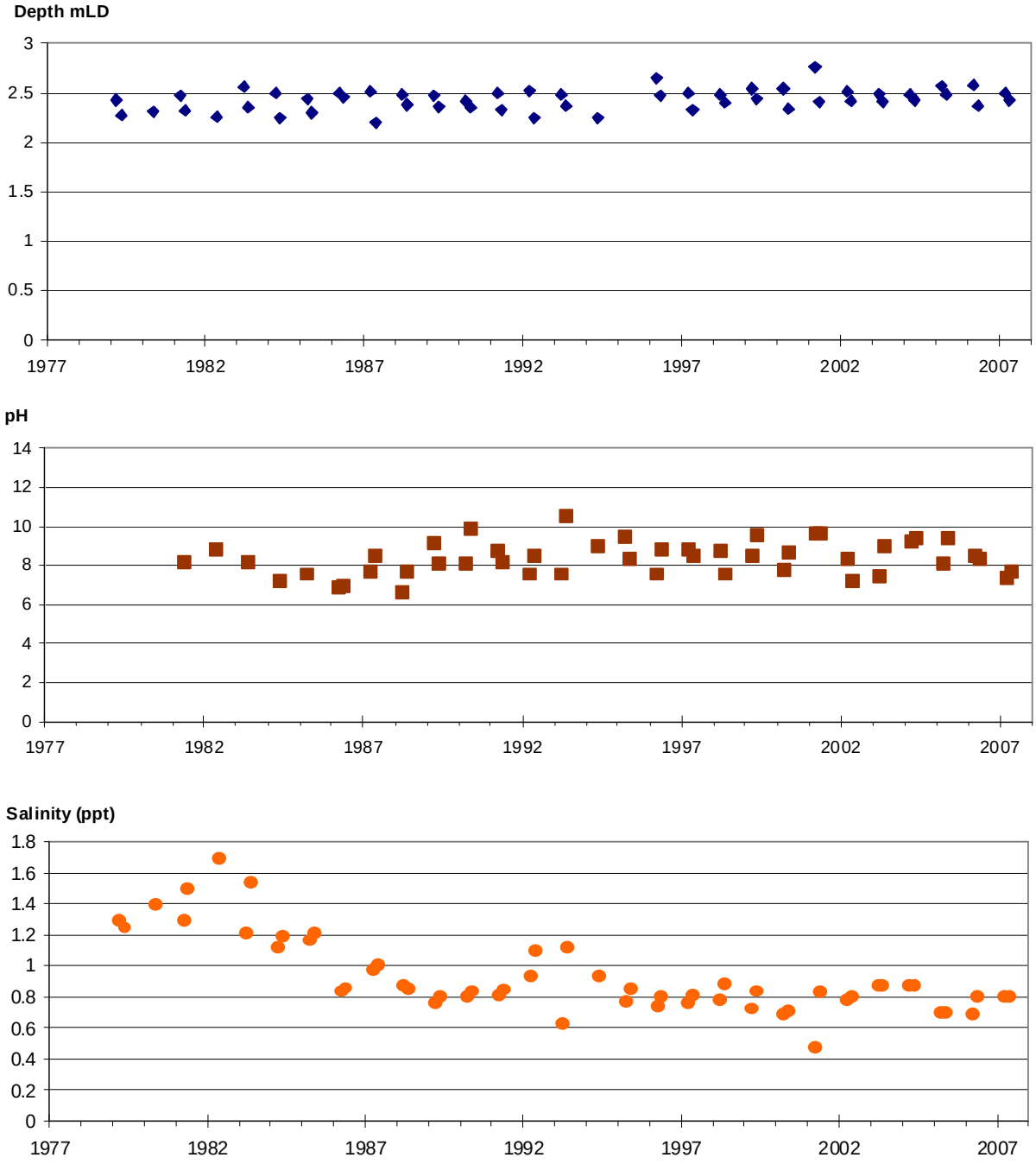
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

ATKINS YATE



Atkins Yate is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

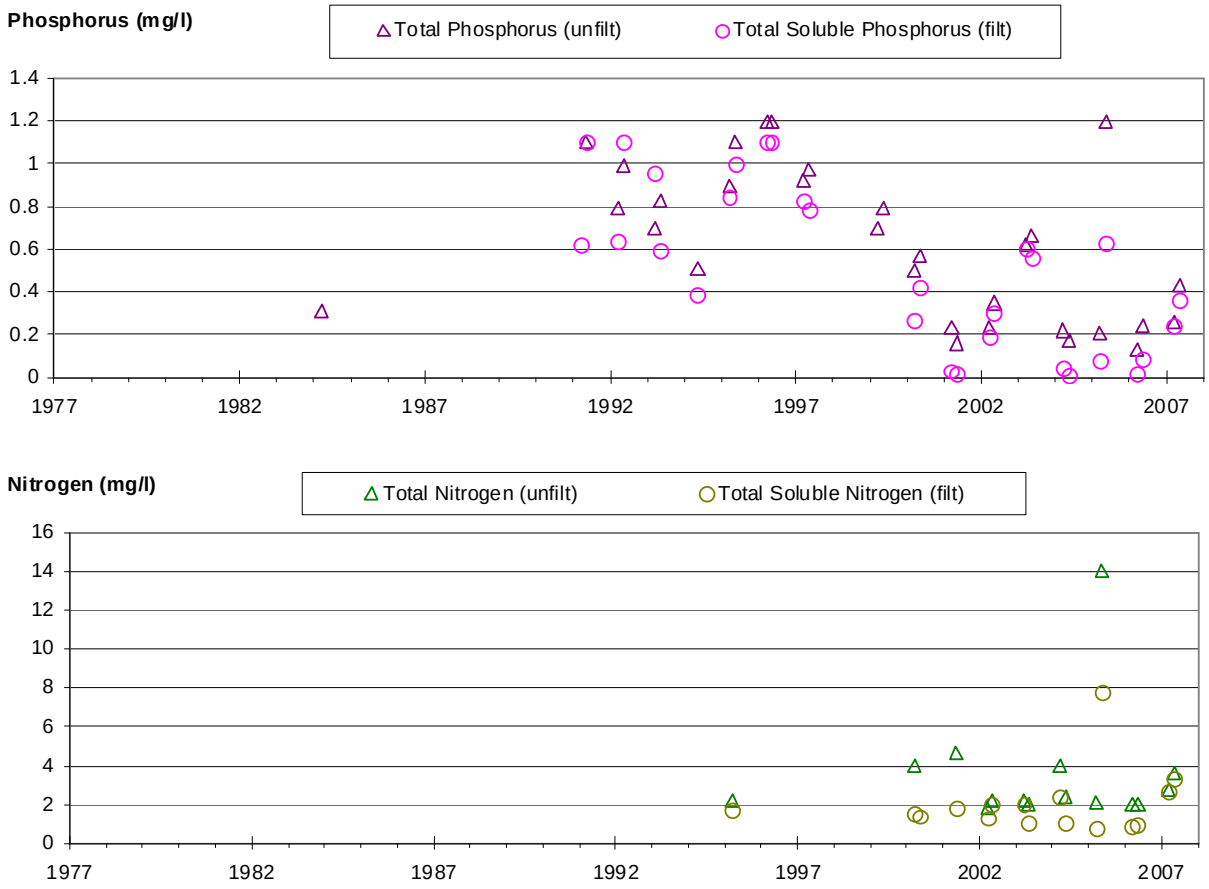
BAMBUN (C)



Notes:

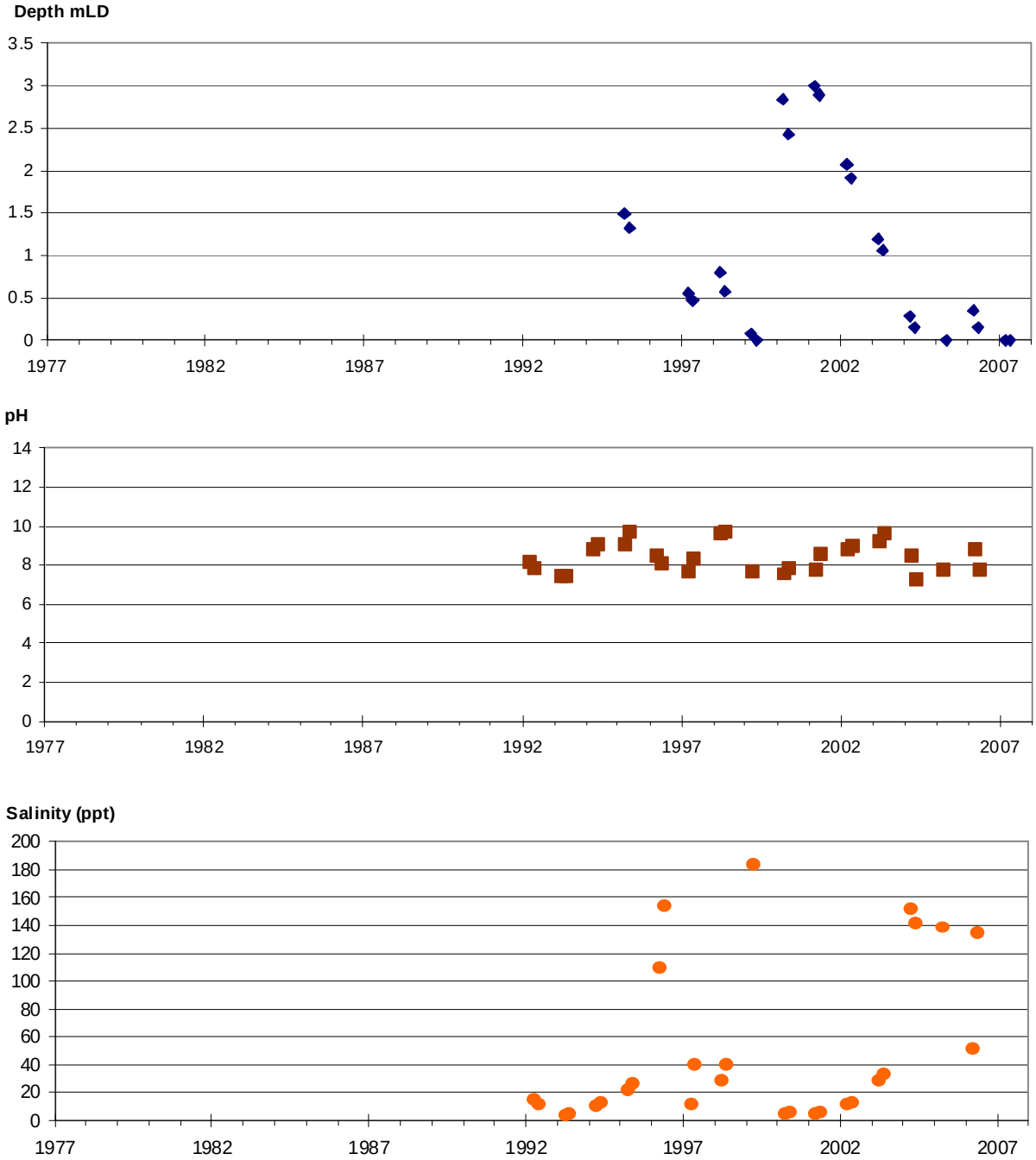
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

BAMBUN



Bambun is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

BENNETTS (C, IM)



Notes:

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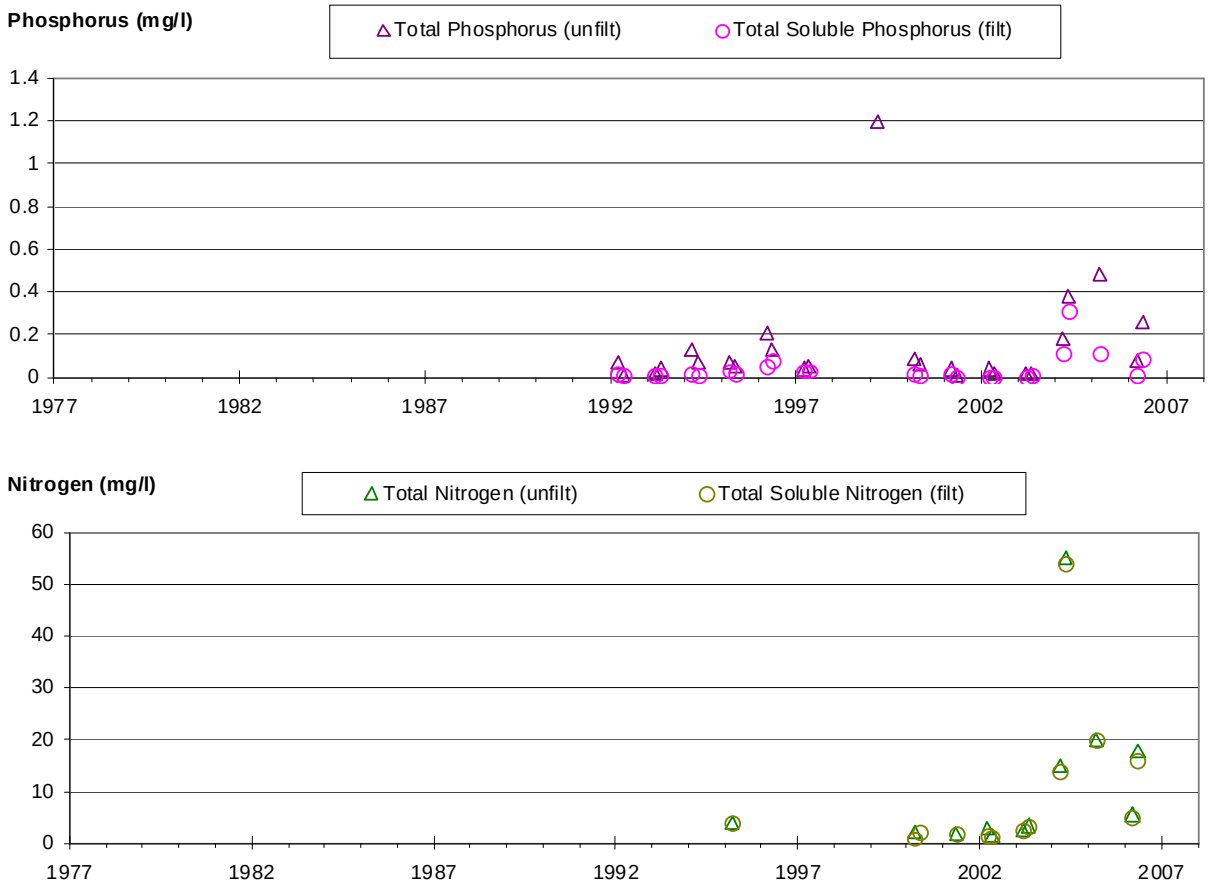
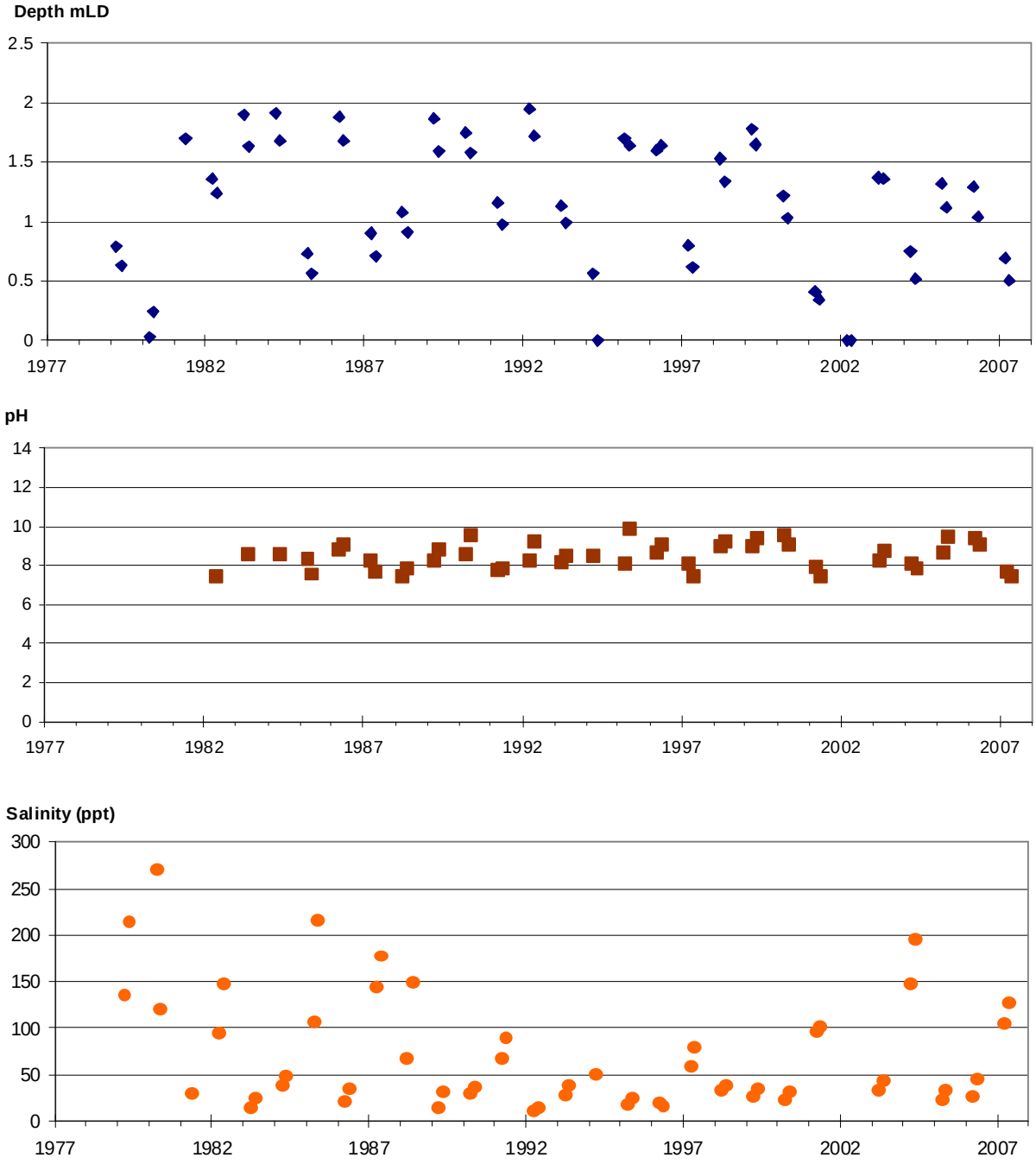
BENNETTS



Bennetts is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

BEVERLEY (C)



Notes:

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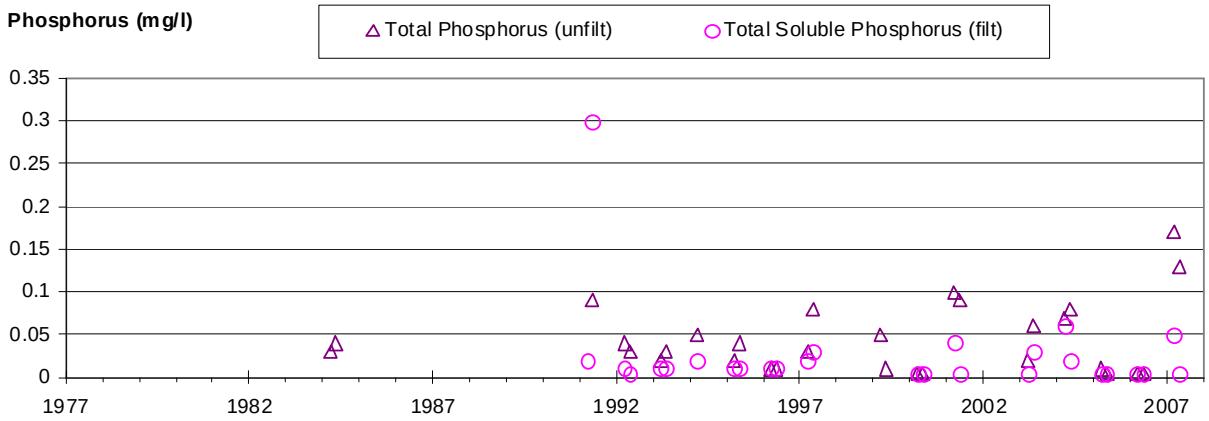
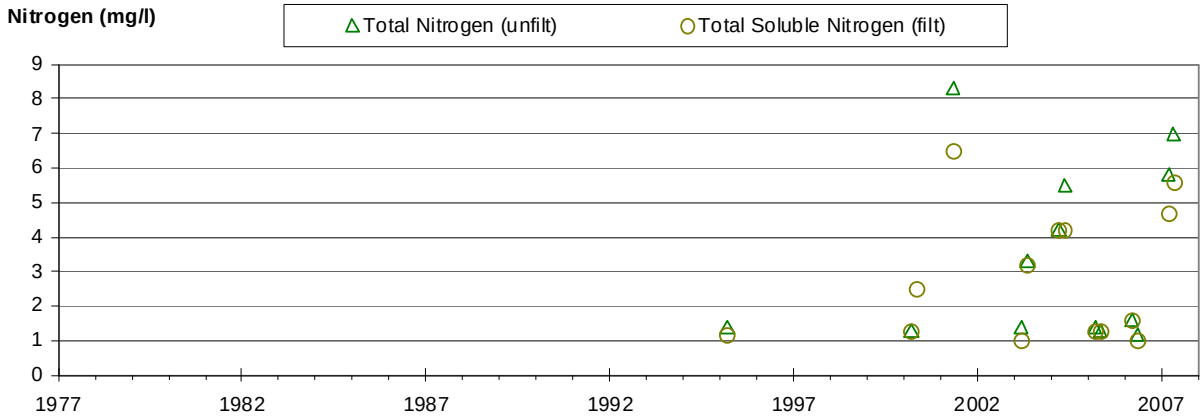
BEVERLEY

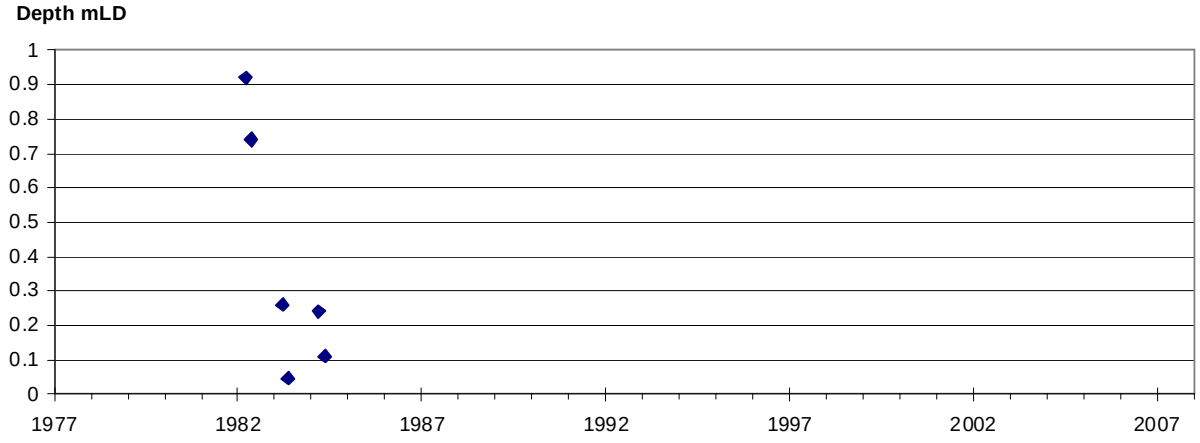


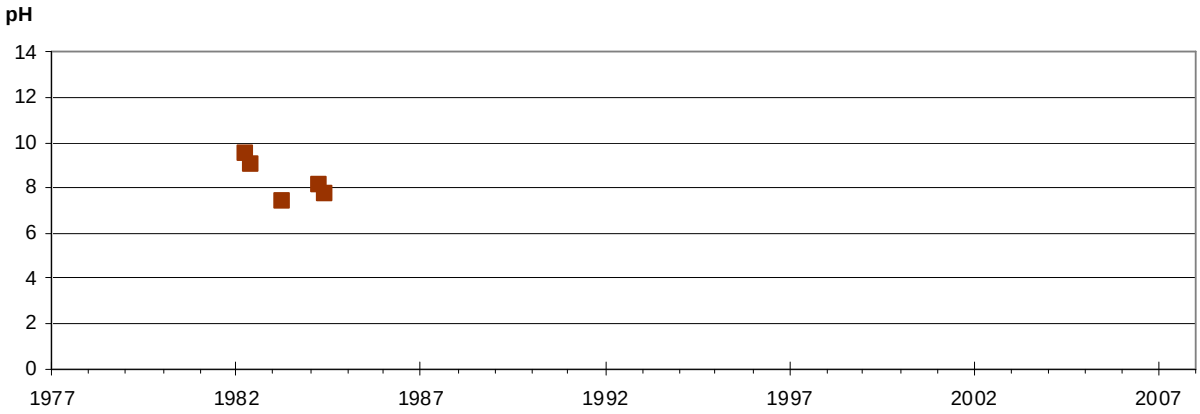


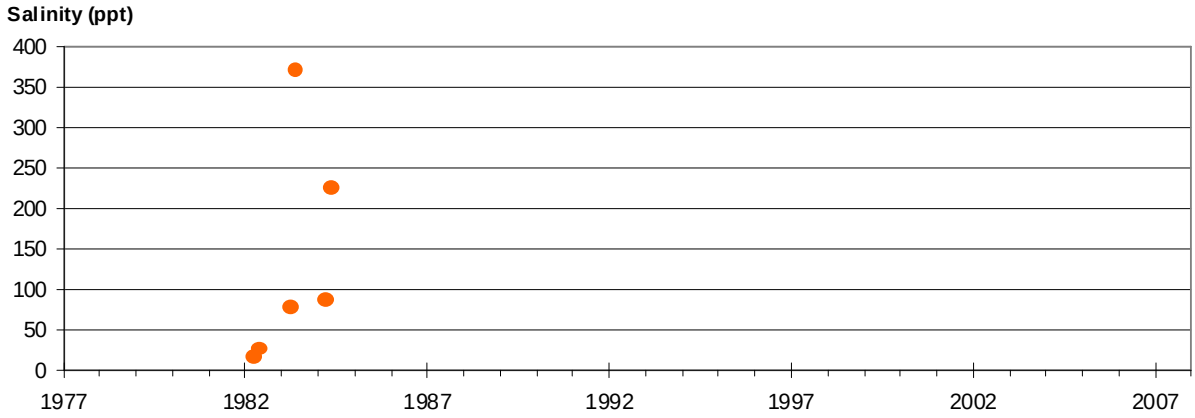
Beverley Lakes is also known as Yenyenning Lakes.

Beverley is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

BIDDY (H)







Notes:
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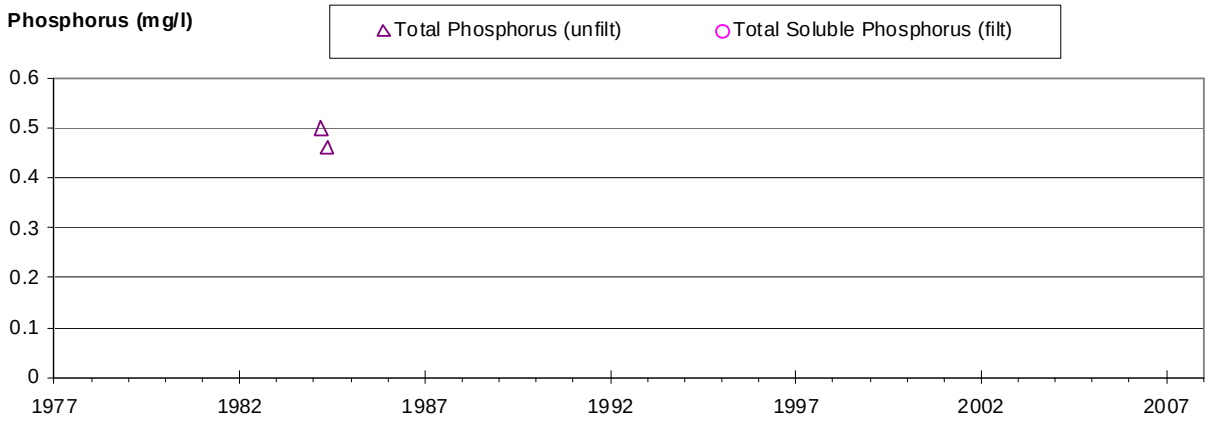
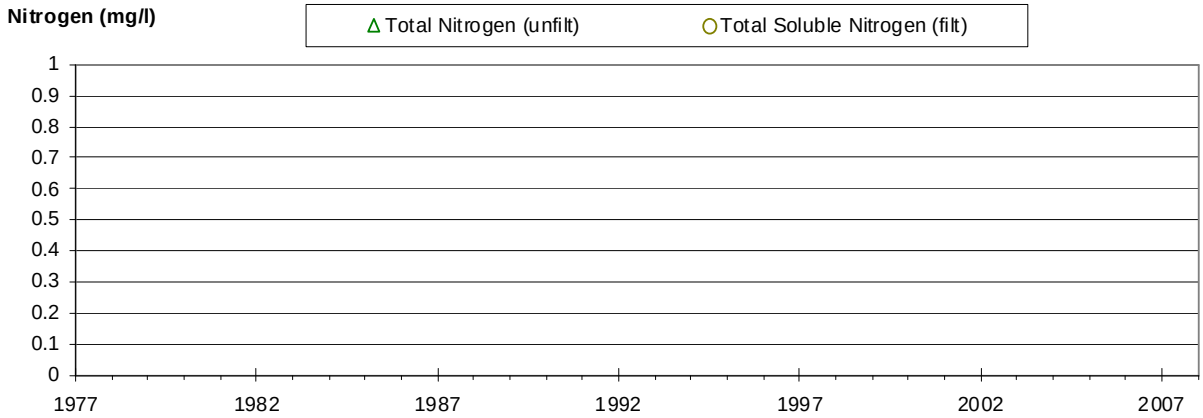
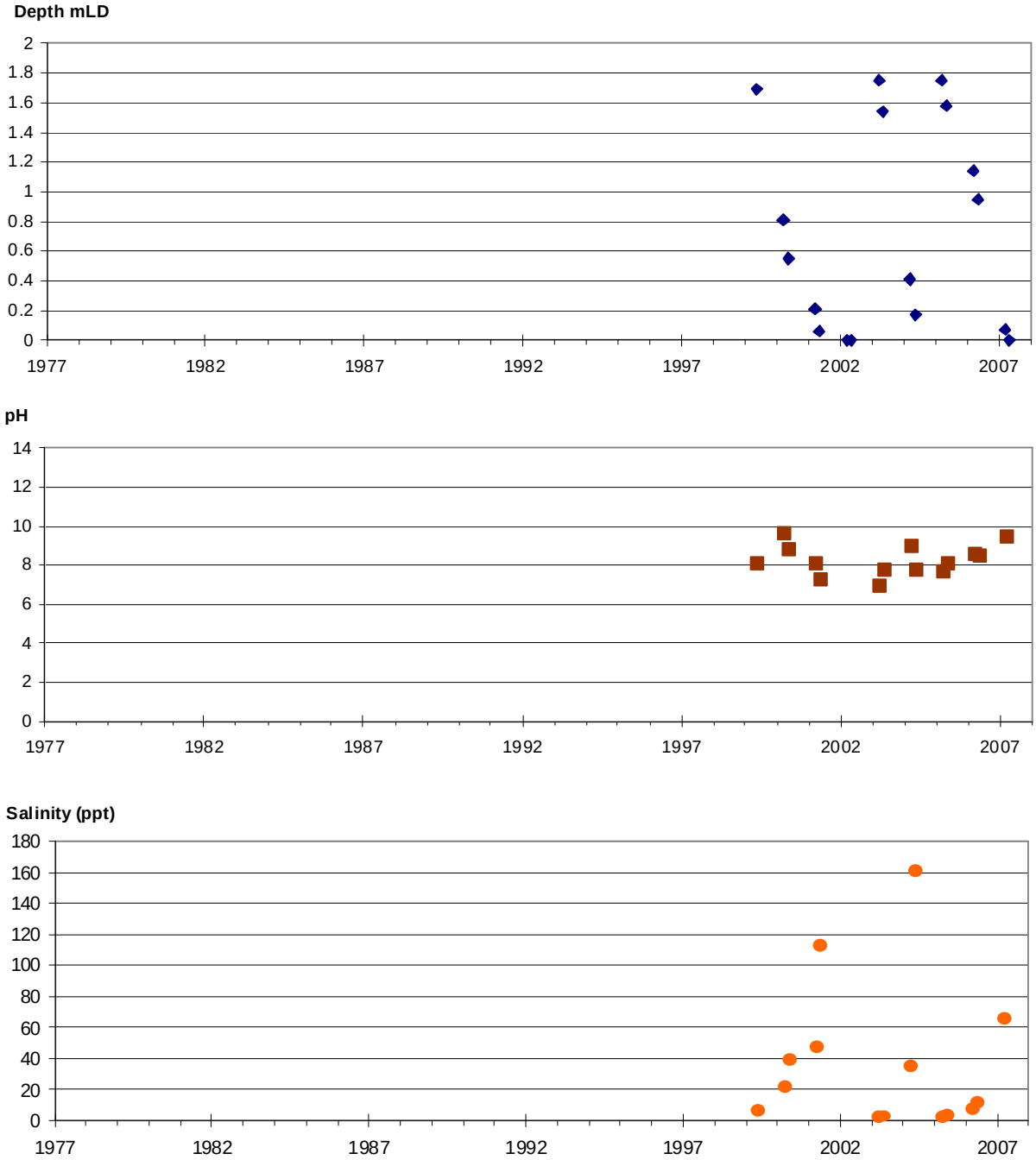
BIDDY





Biddy is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

BLUE GUM (C, IM)



Notes:

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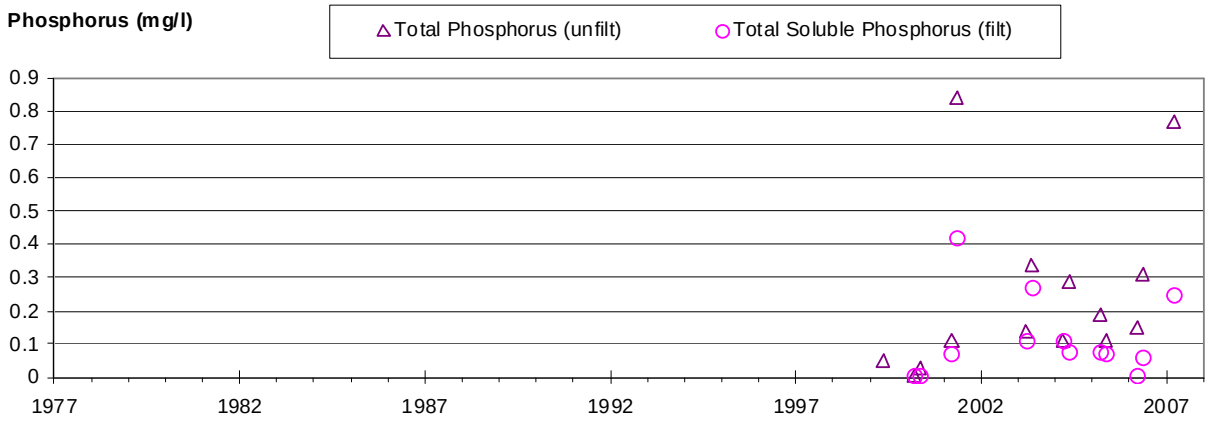
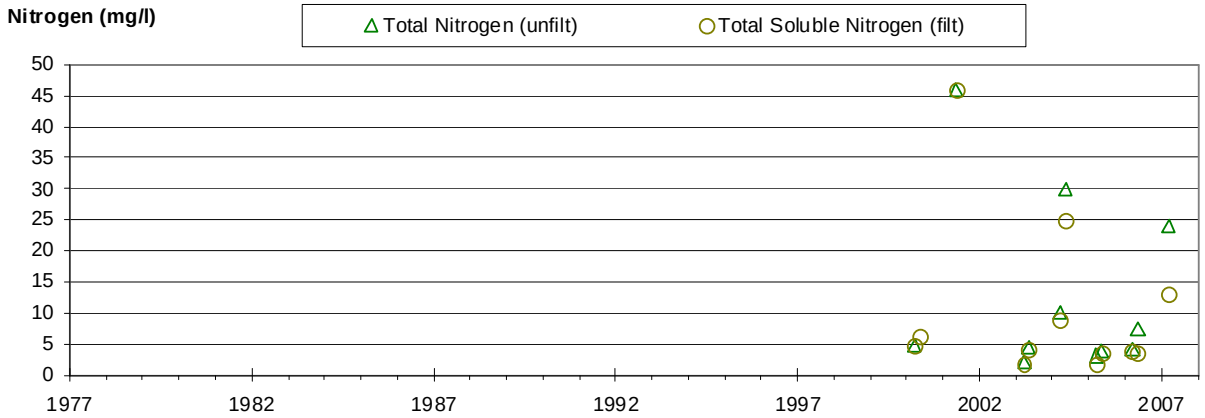
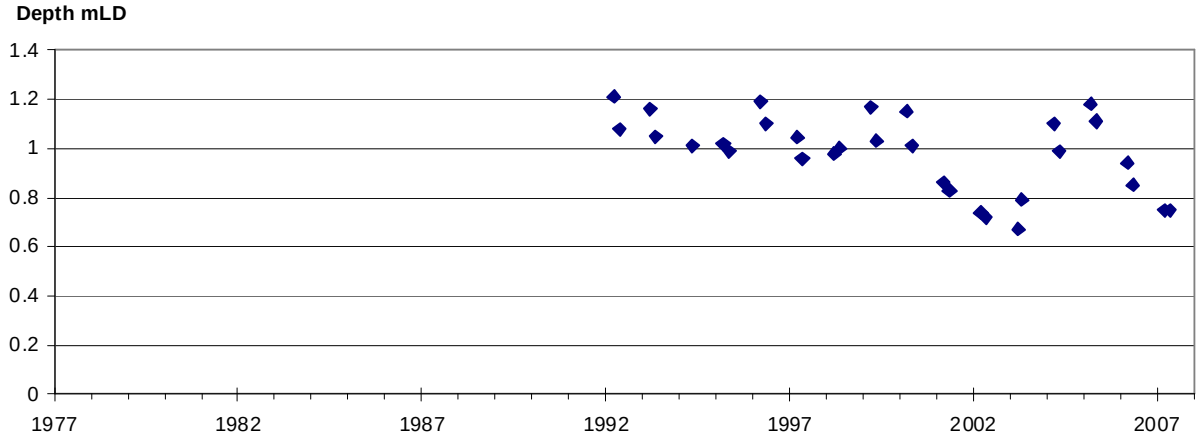
BLUE GUM

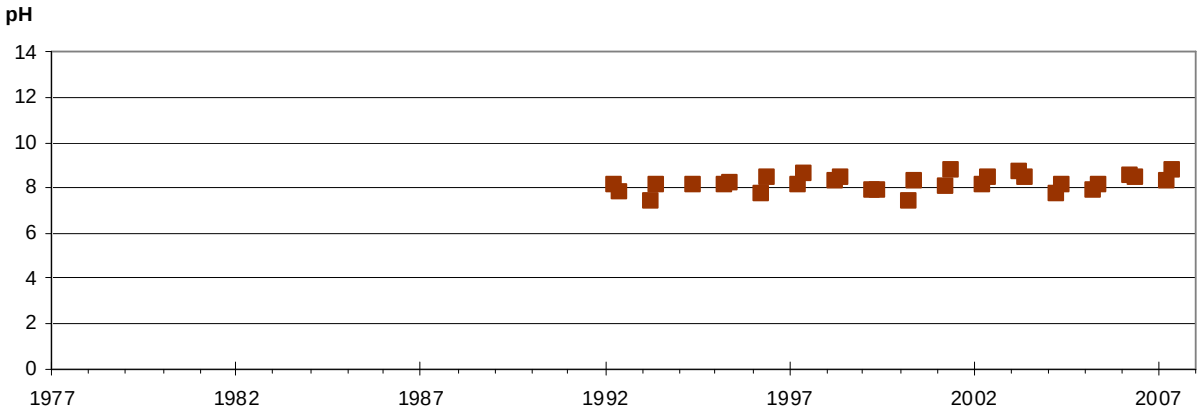


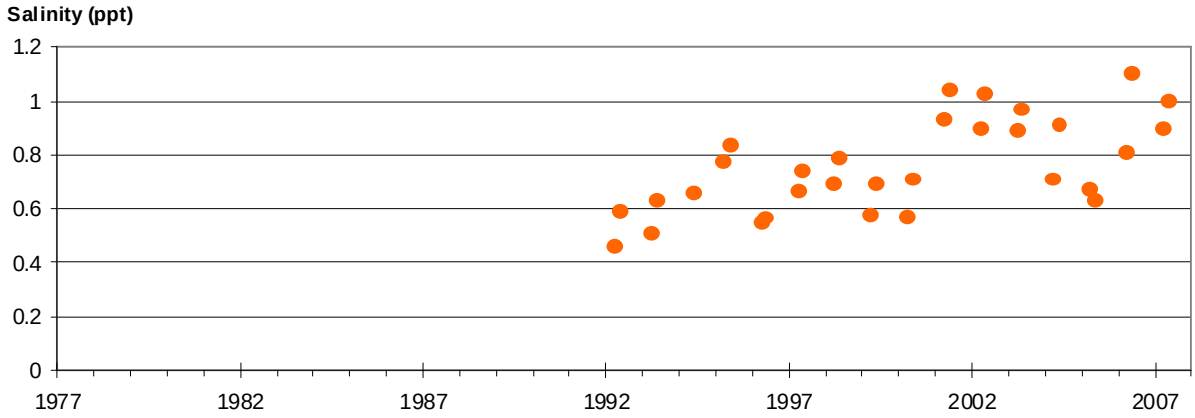


Blue Gum is in the Moora District (headquartered in Jurien Bay) (headquartered in Jurien Bay) of the Midwest DEC Region.

BOAT HARBOUR 1 (C)







Notes:
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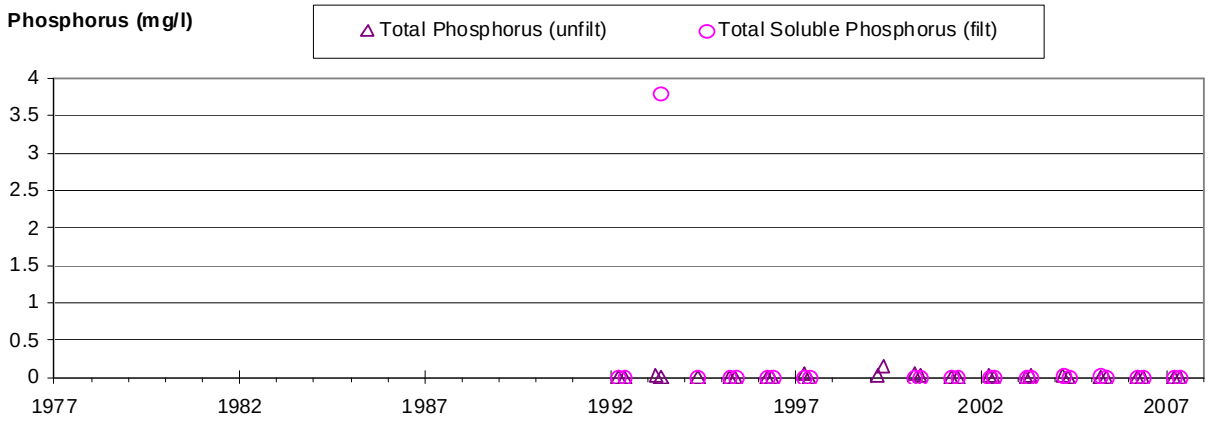
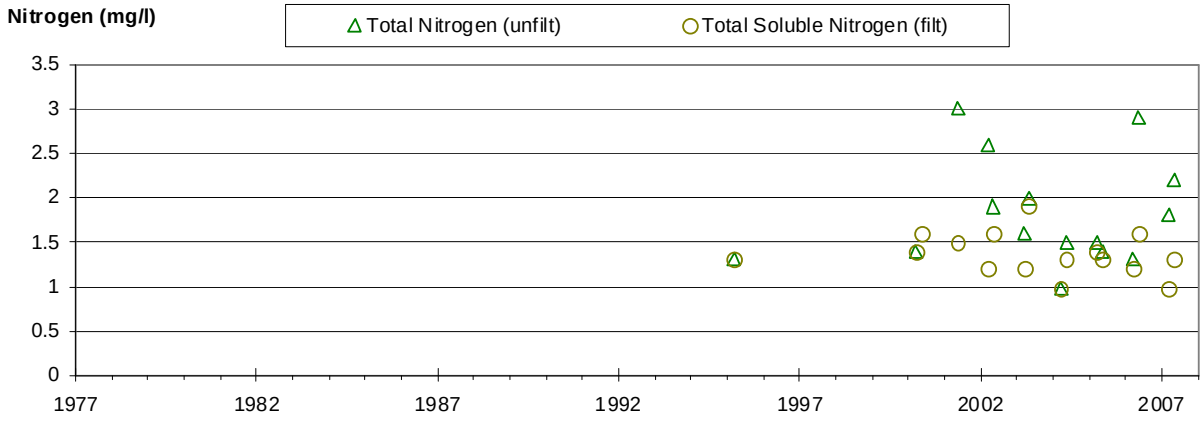
BOAT HARBOUR 1

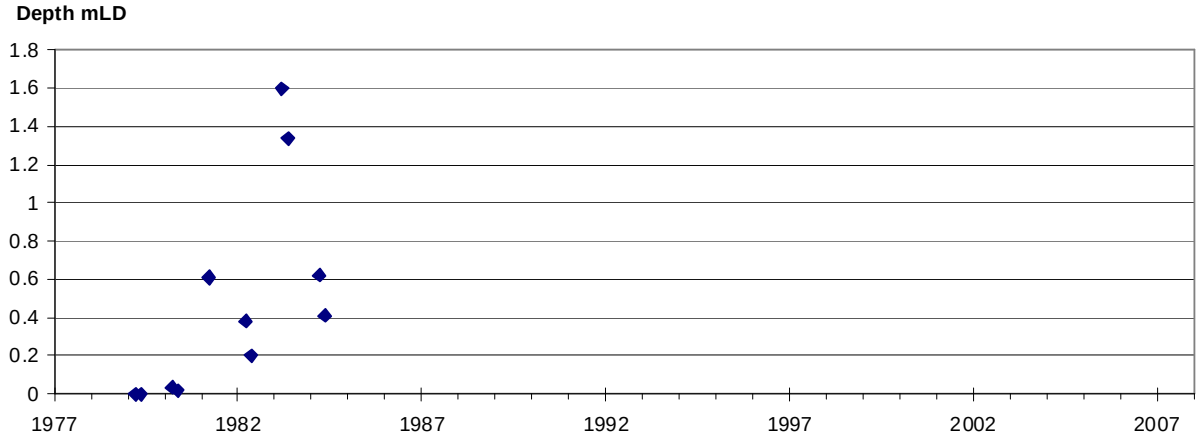


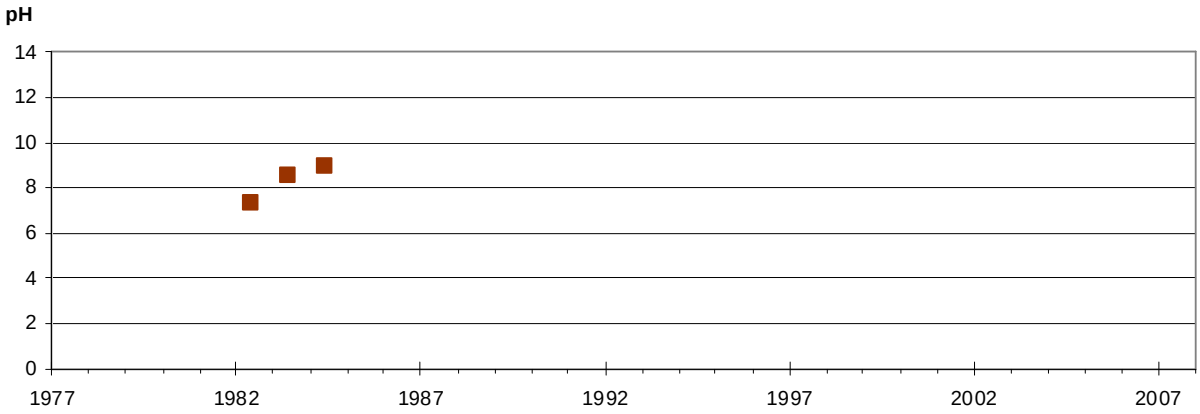


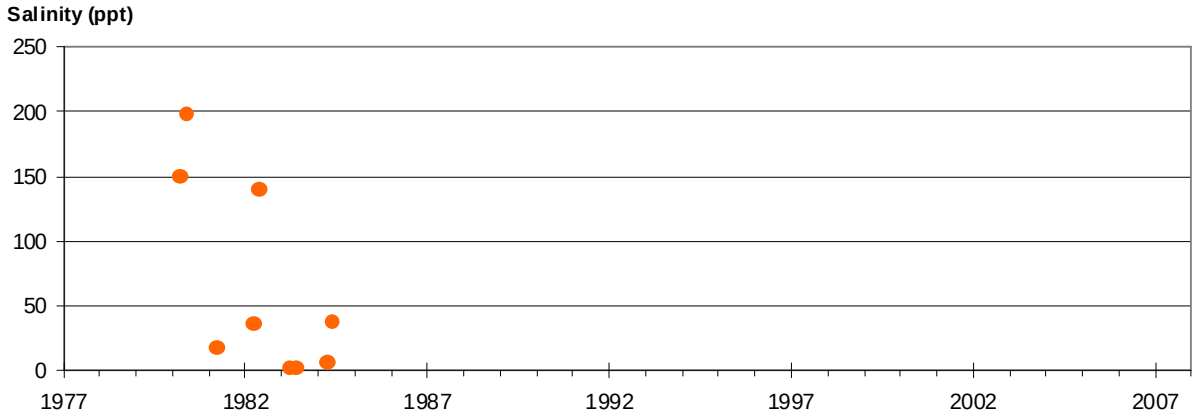
Boat Harbour 1 is a component of the 'Owingup Swamp System', which is listed in the 'Directory of Important Wetlands in Australia'.

Boat Harbour 1 is in the Frankland District (headquartered in Walpole) of the Warren DEC Region.

BOKAN (H)







Notes:
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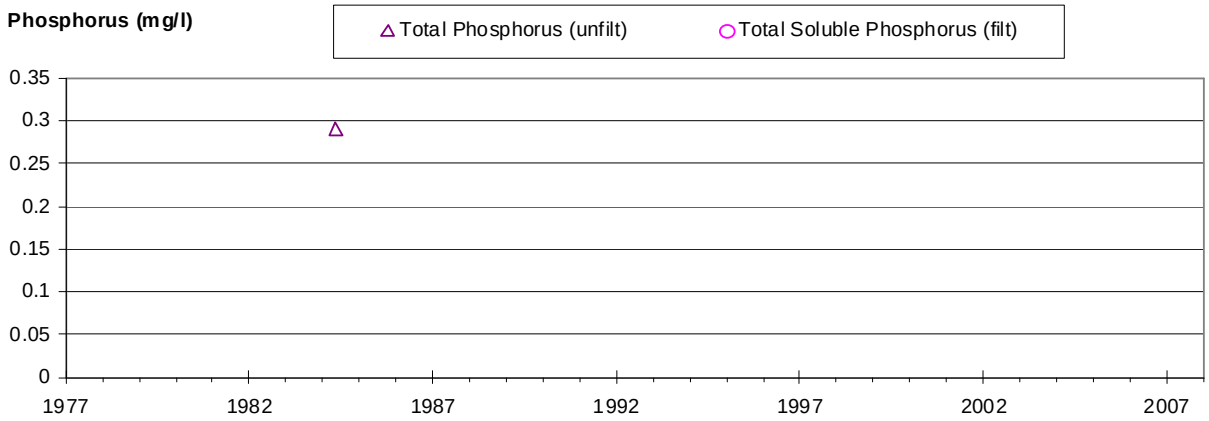
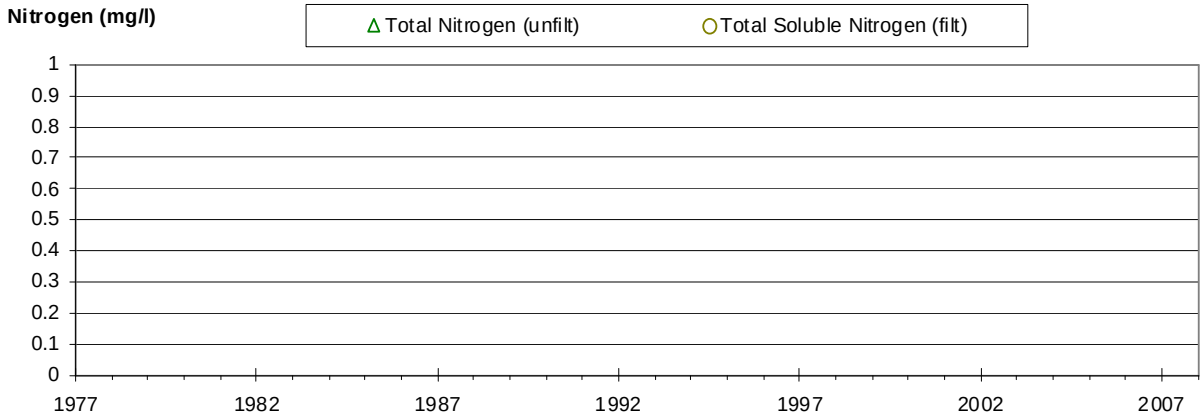
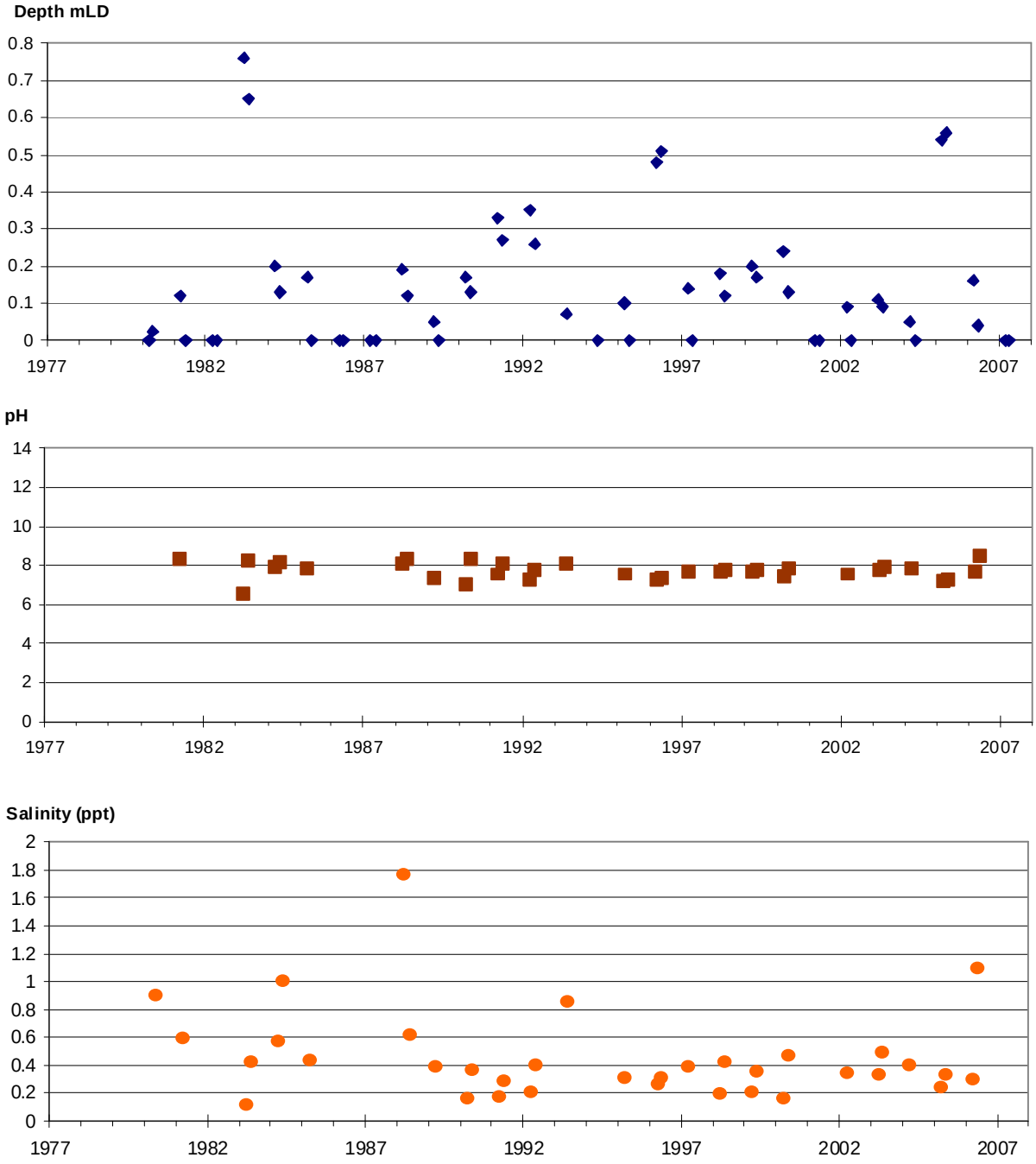
BOKAN





Bokan is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

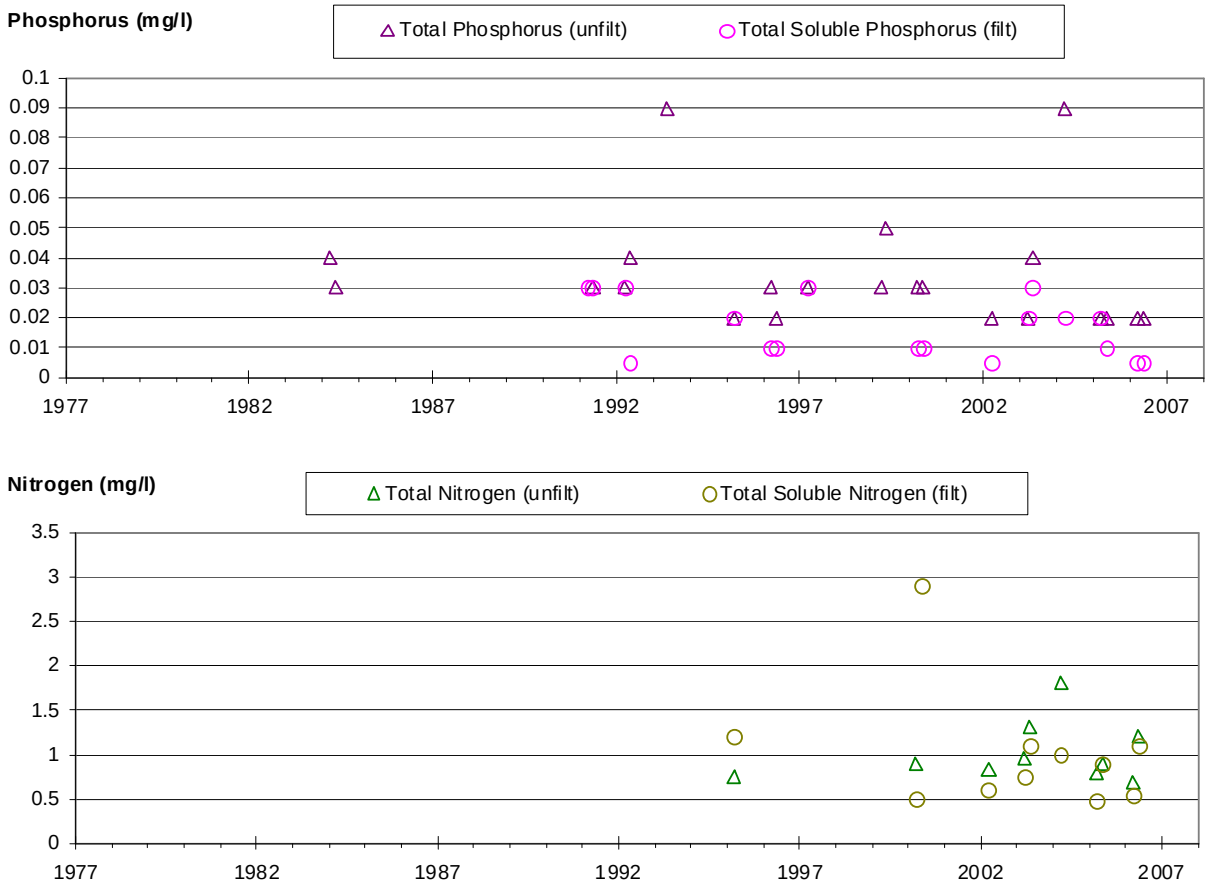
BOYUP BROOK 18239 (C, IM)



Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

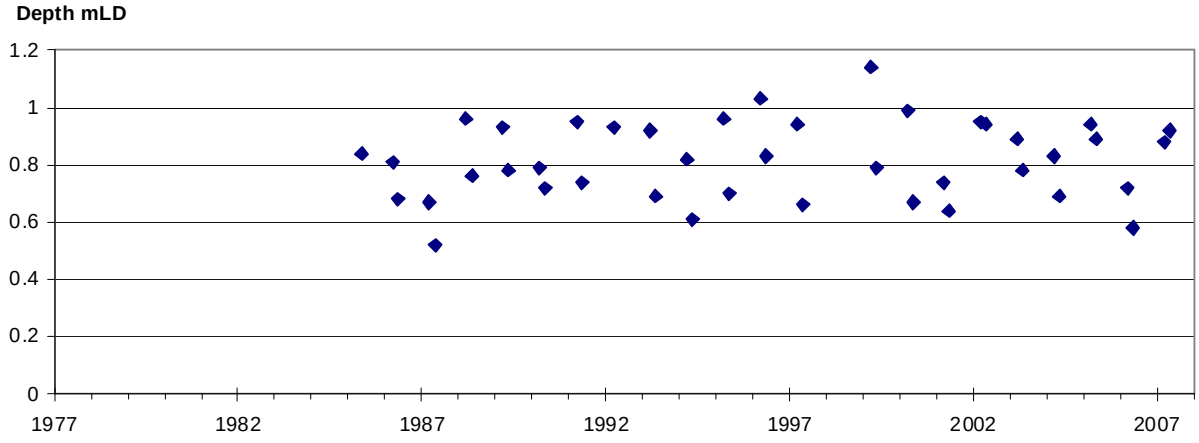
BOYUP BROOK 18239

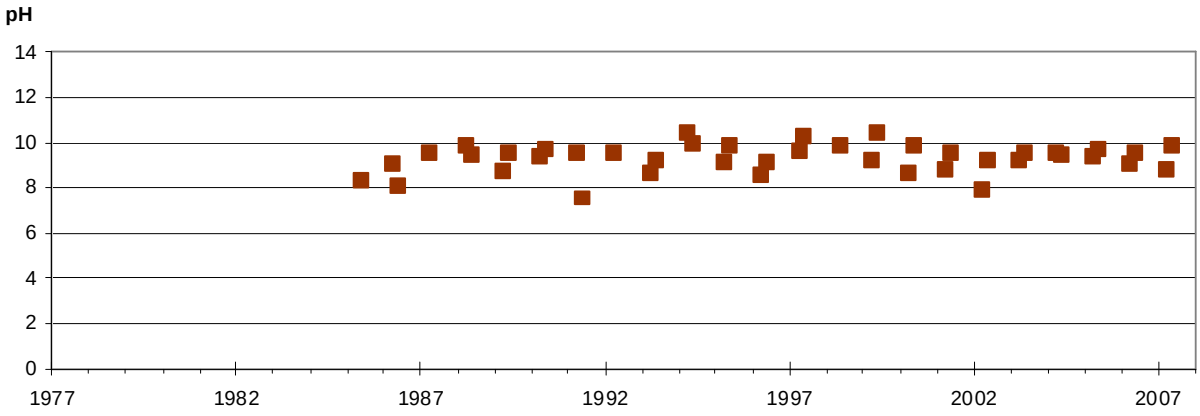


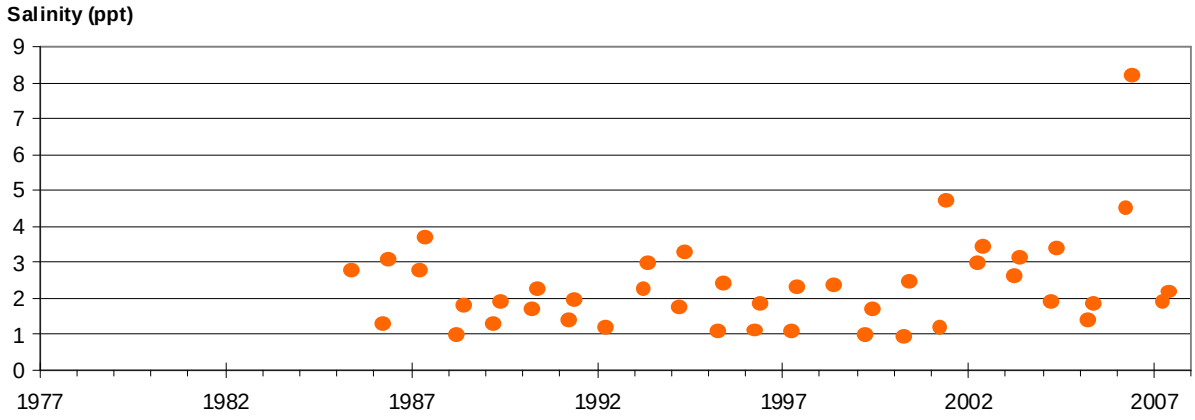
Boyup Brook 18239 is also known as Kulicup Swamp.

Boyup Brook 18239 is in the Blackwood District (headquartered in Busselton) of the South West DEC Region.

BROADWATER (C)

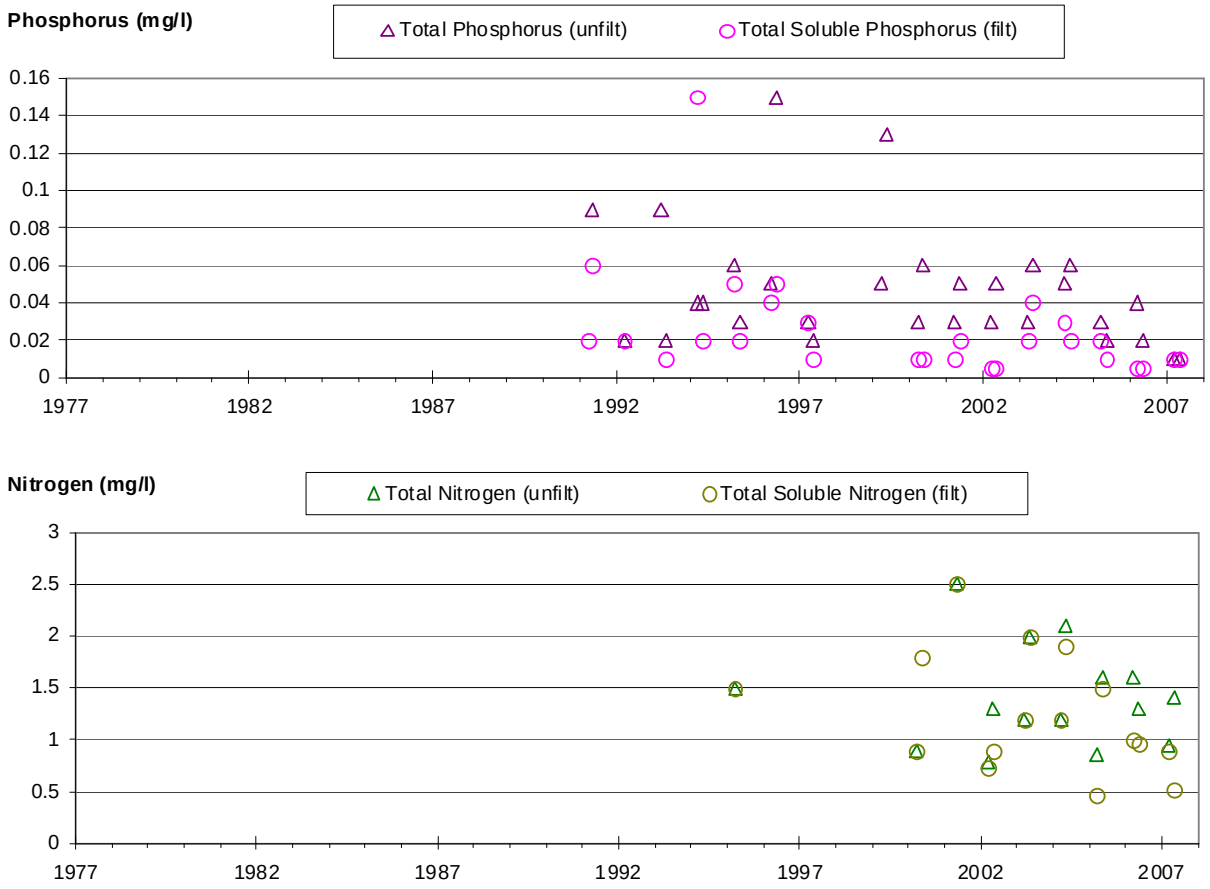






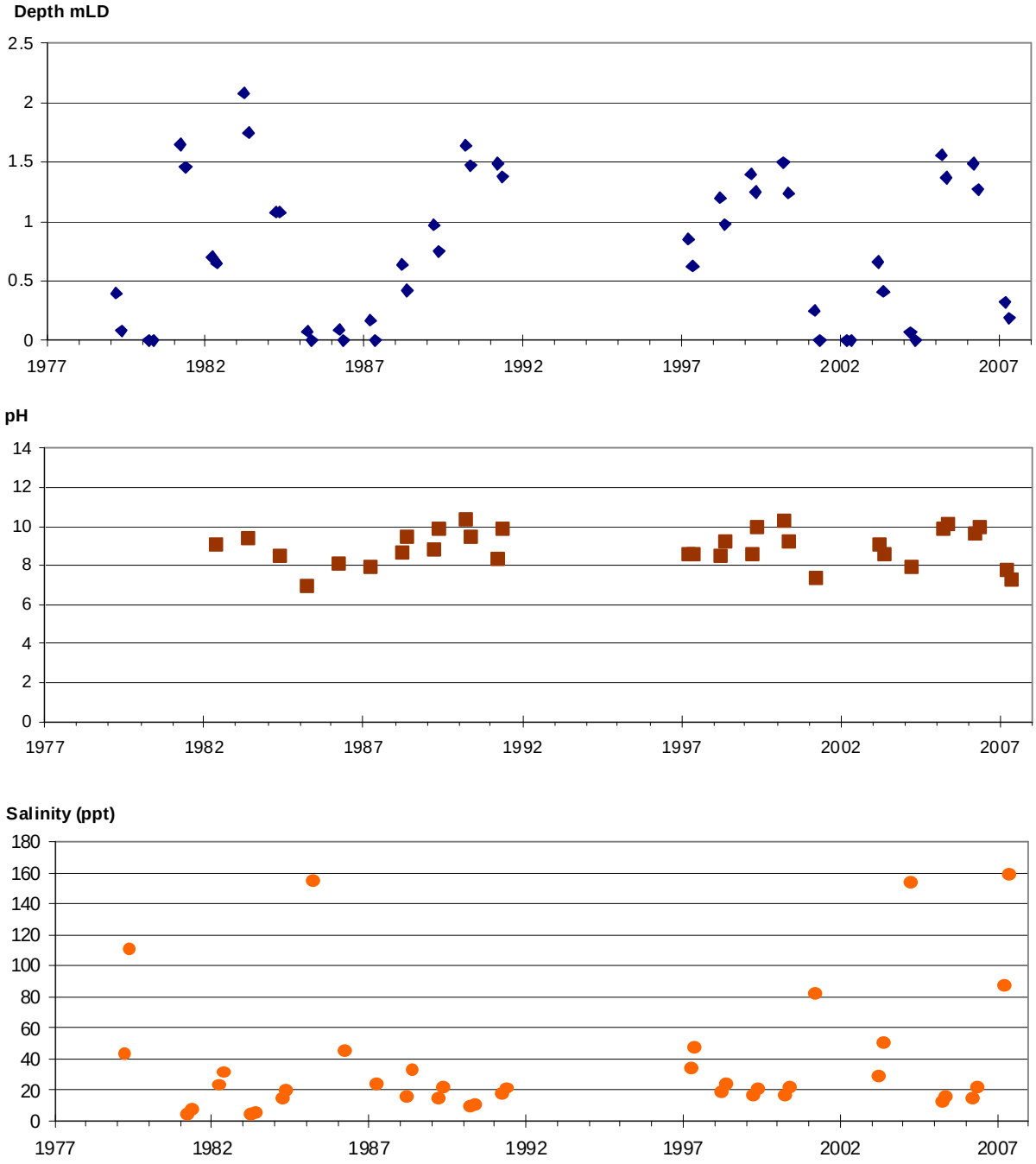
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

BROADWATER



Broadwater is in the Blackwood District (headquartered in Busselton) of the South West DEC Region.

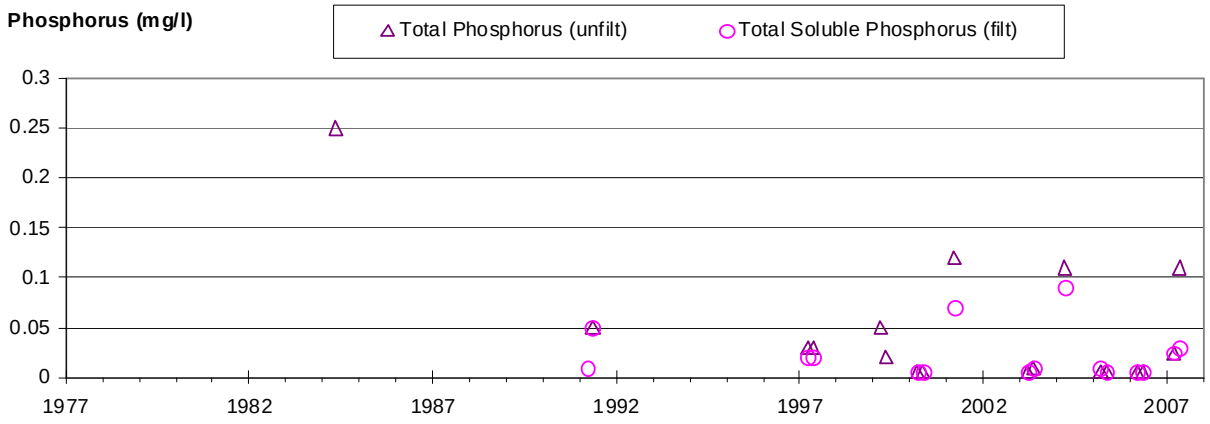
BROWN (C)

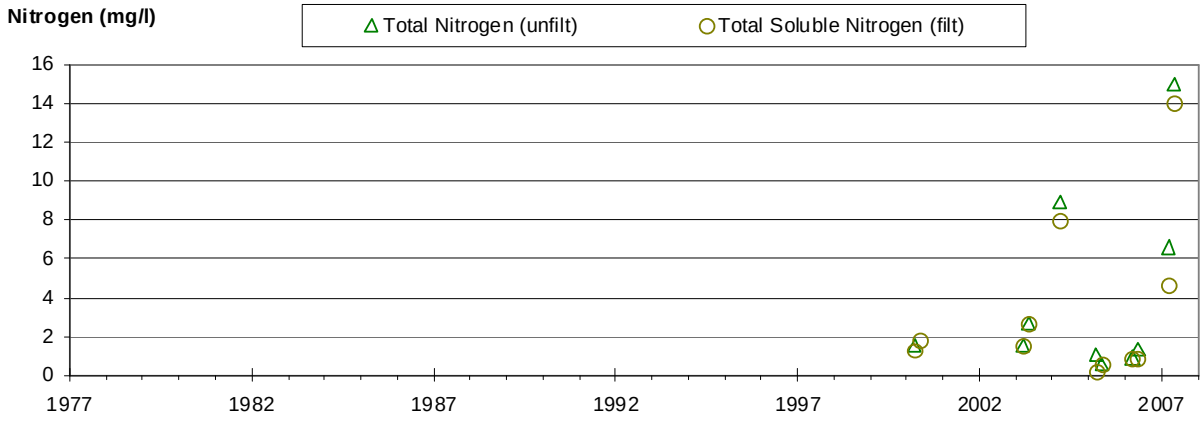


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

BROWN

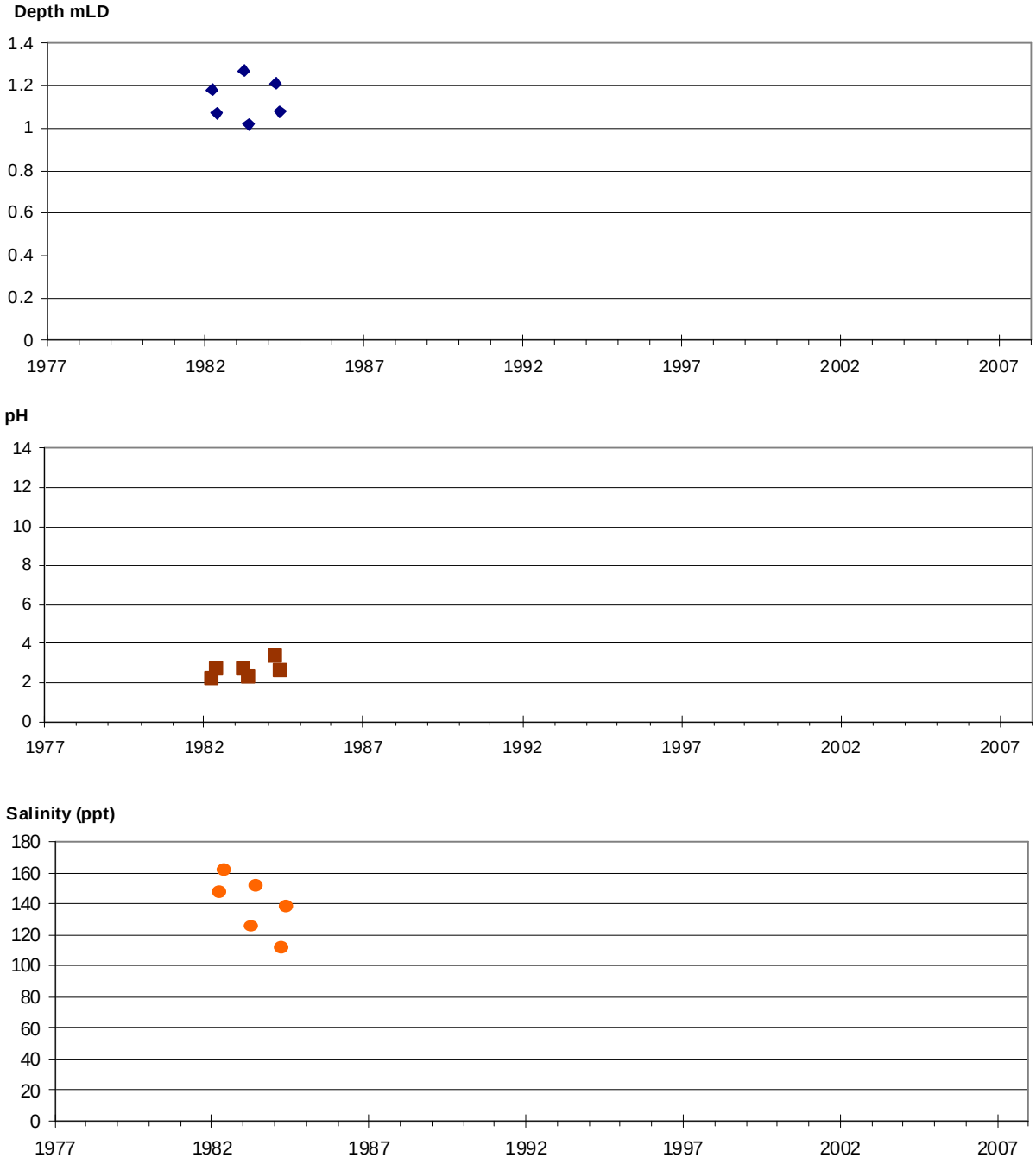




Brown is a component of the 'Yealering Lakes System', which is listed in the 'Directory of Important Wetlands in Australia'.

Brown is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

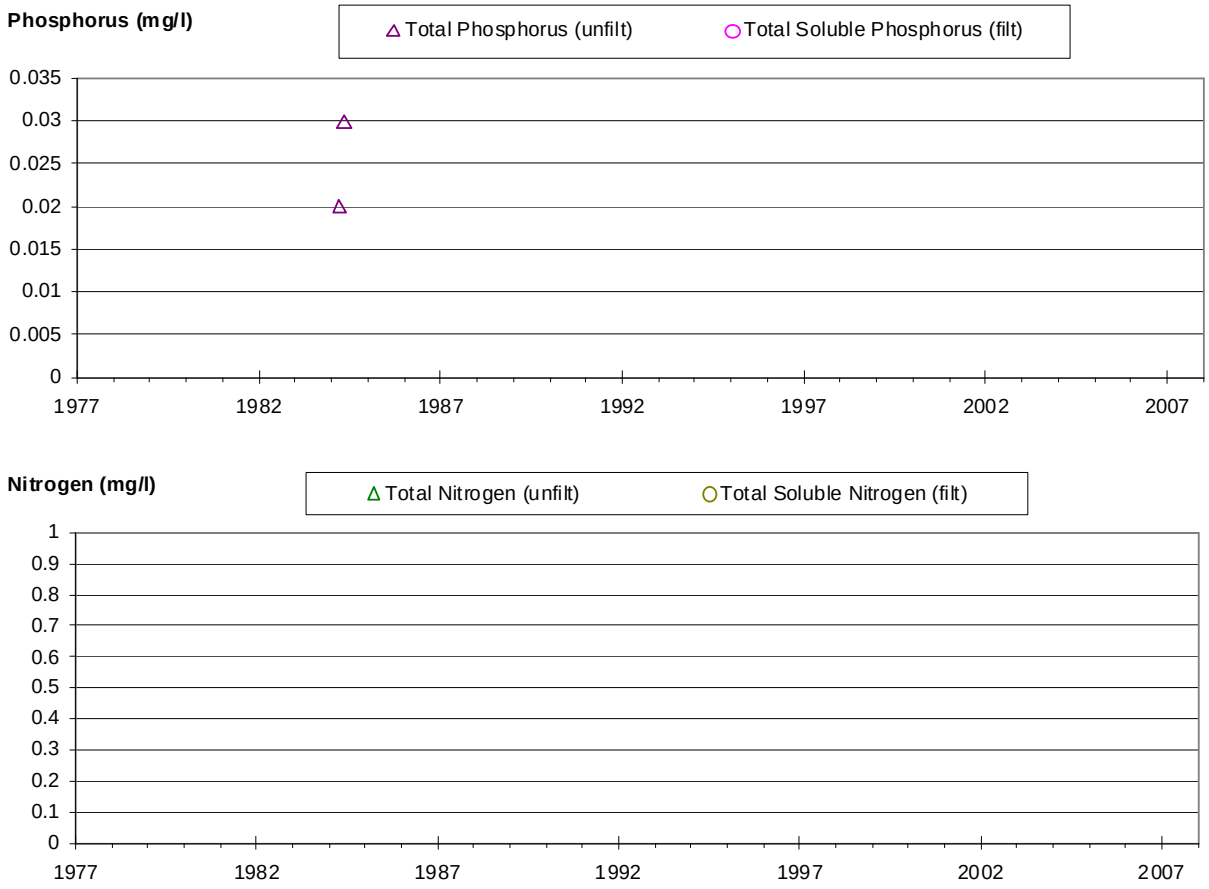
BRUCE ROCK 30969 (H)



Notes:

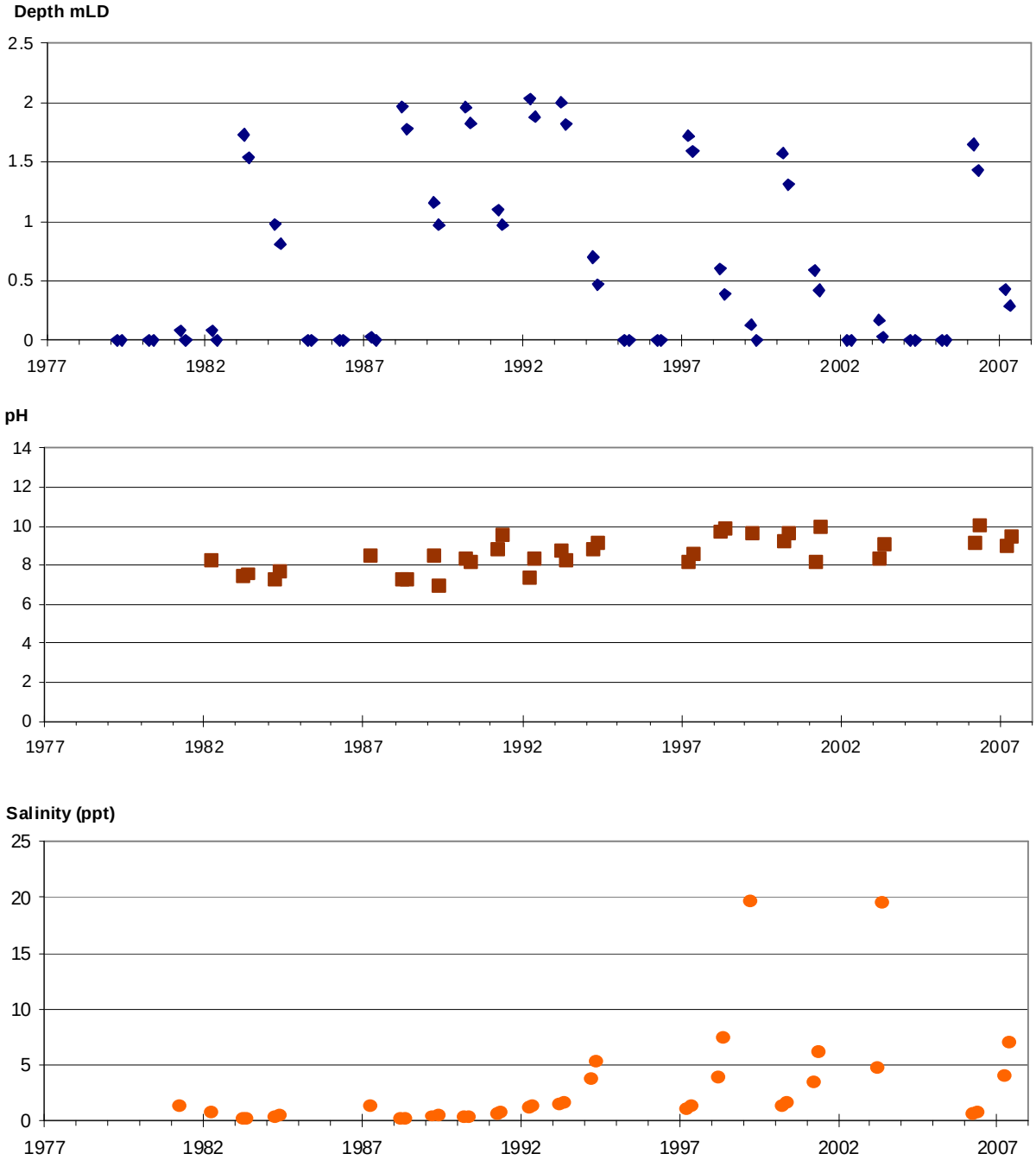
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

BRUCE ROCK 30969



Bruce Rock 30969 is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

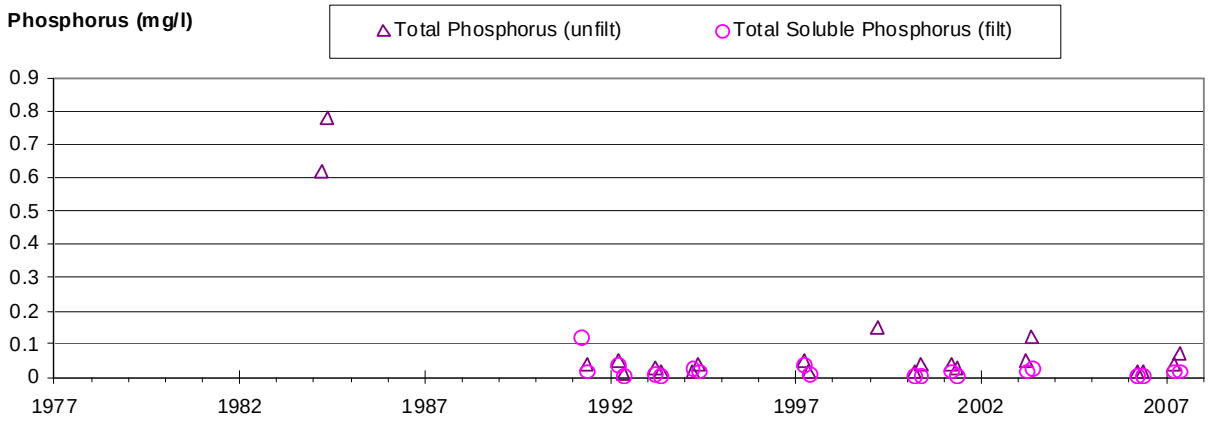
BRYDE (C, IM)

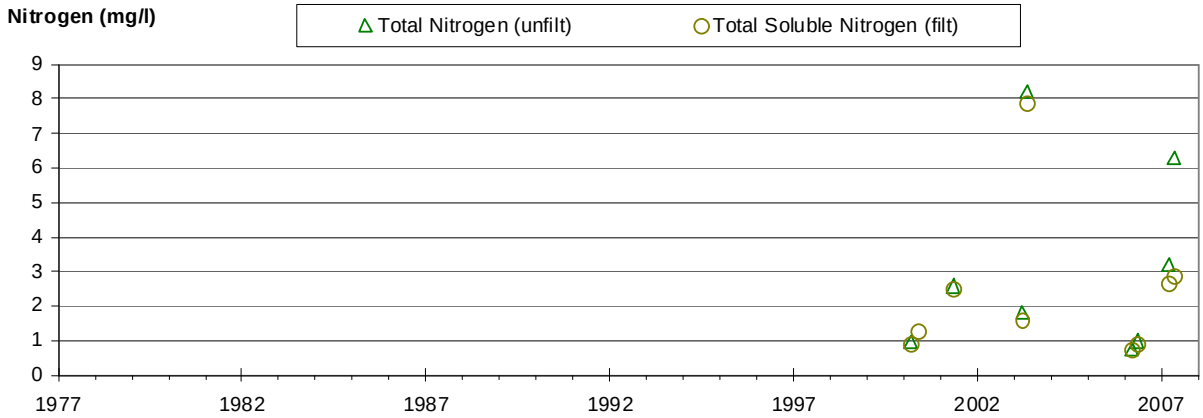


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

BRYDE



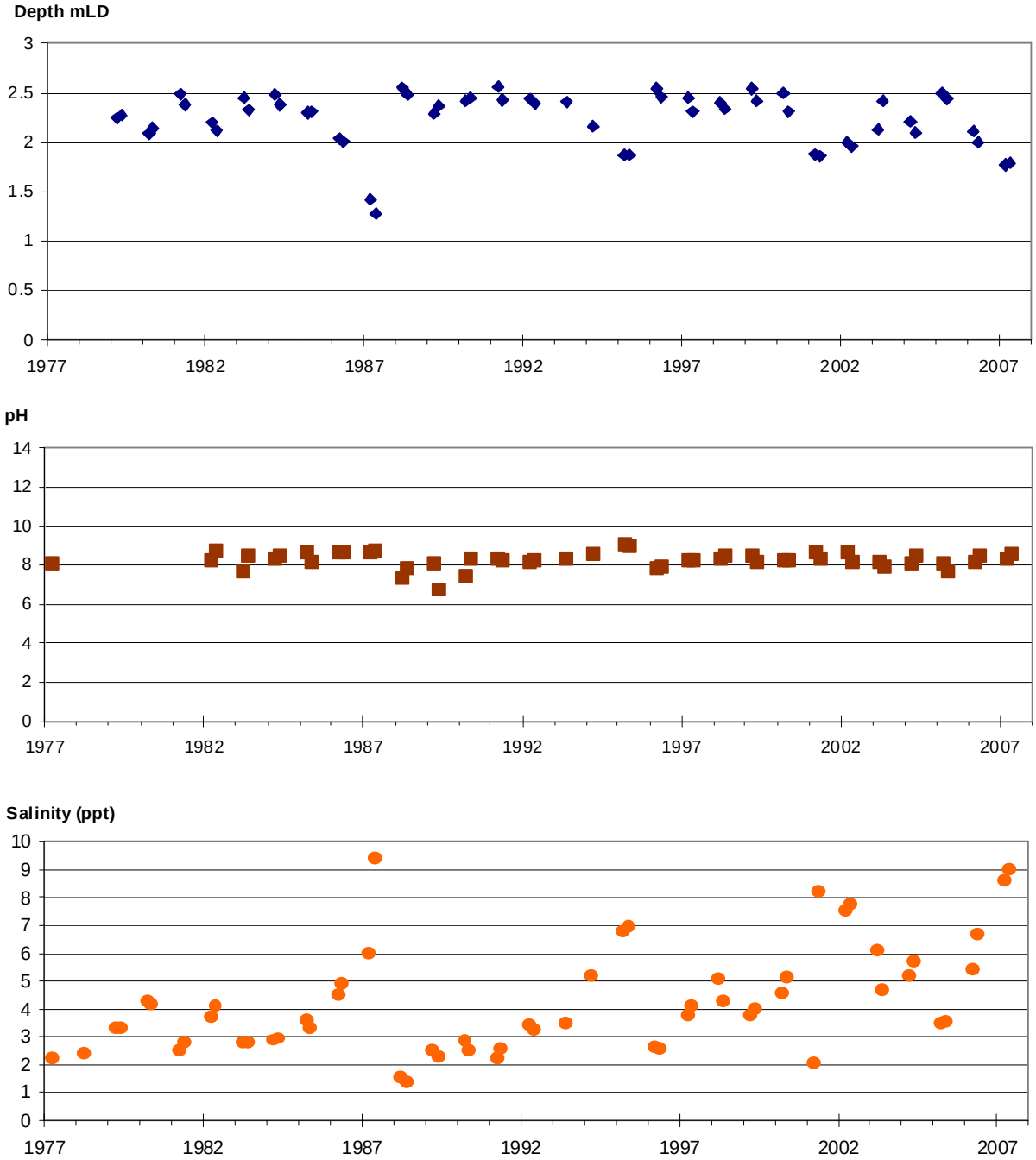


Bryde is a component of the 'Lake Bryde – East Lake Bryde System', which is listed in the 'Directory of Important Wetlands in Australia'.

Bryde is within the Lake Bryde Natural Diversity Recovery Catchment.

Bryde is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

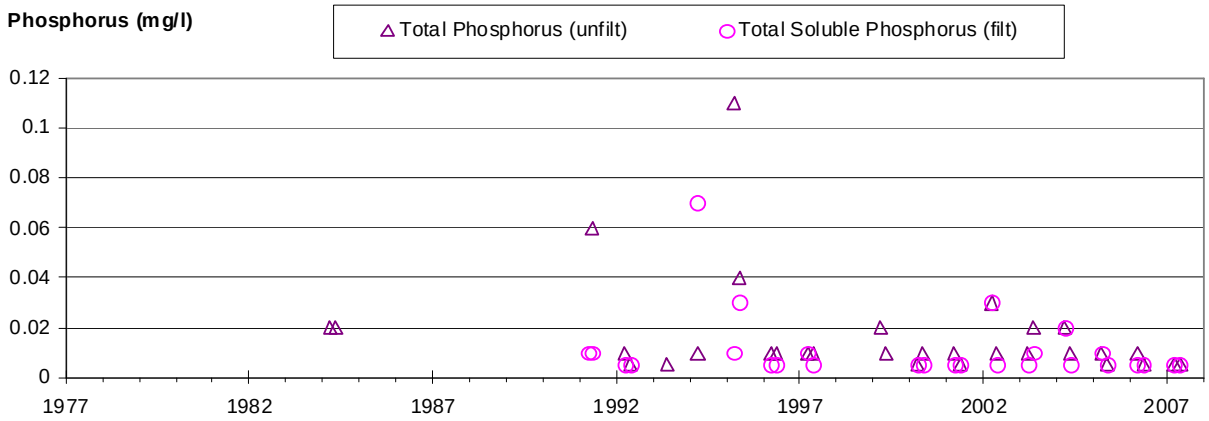
BYENUP (C)

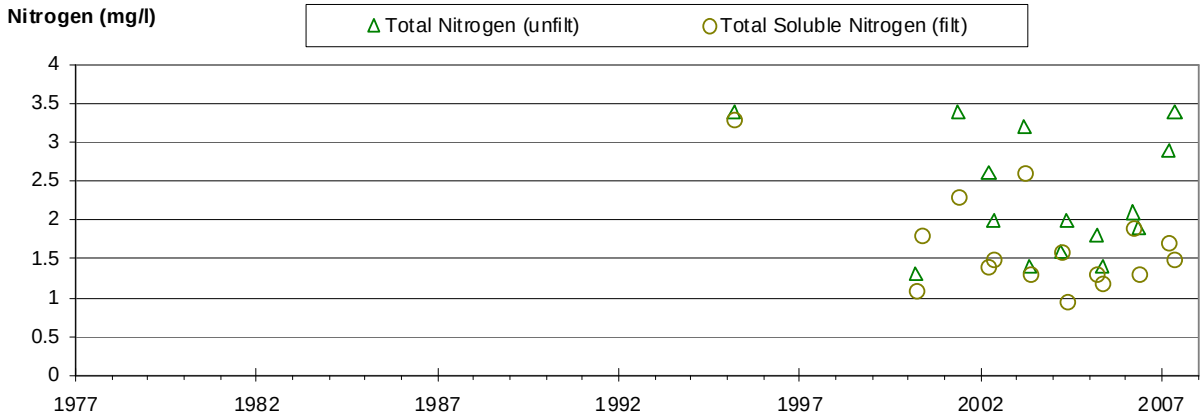


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

BYENUP





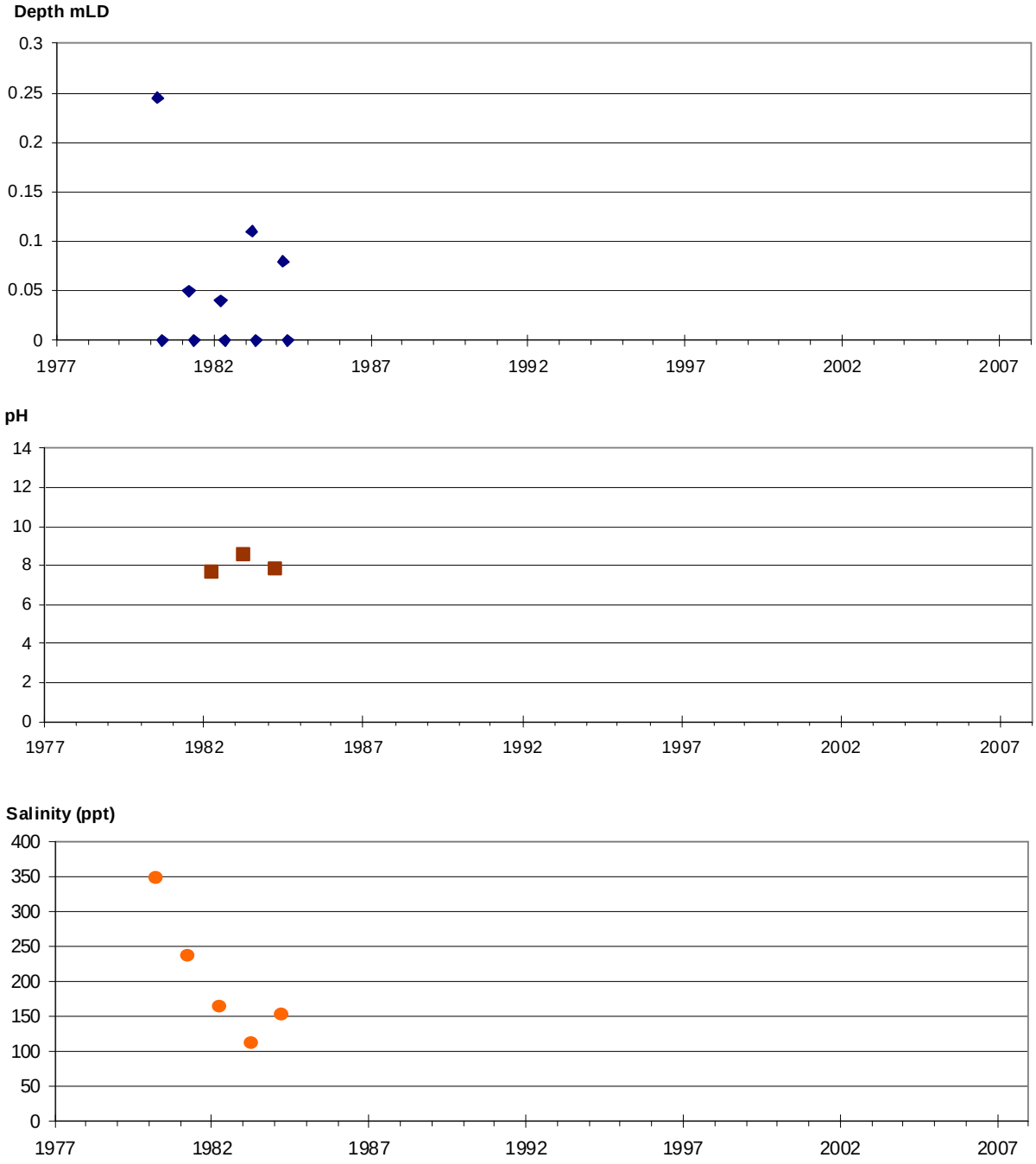
Byenup is a component of the 'Muir-Byenup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Byenup is also a component of the 'Byenup Lagoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

Byenup is within the Muir-Unicup Natural Diversity Recovery Catchment.

Byenup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

CAIRLOCUP (H)



Notes:

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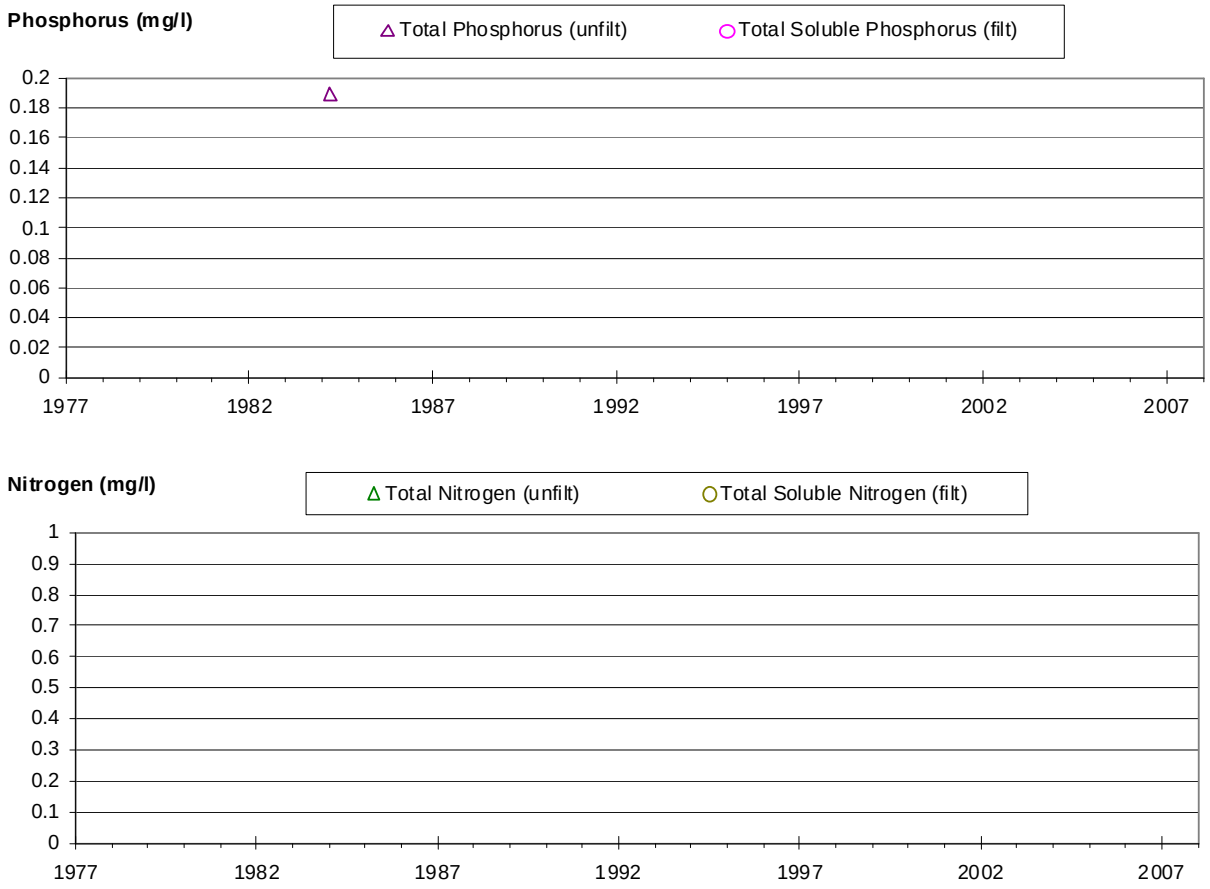
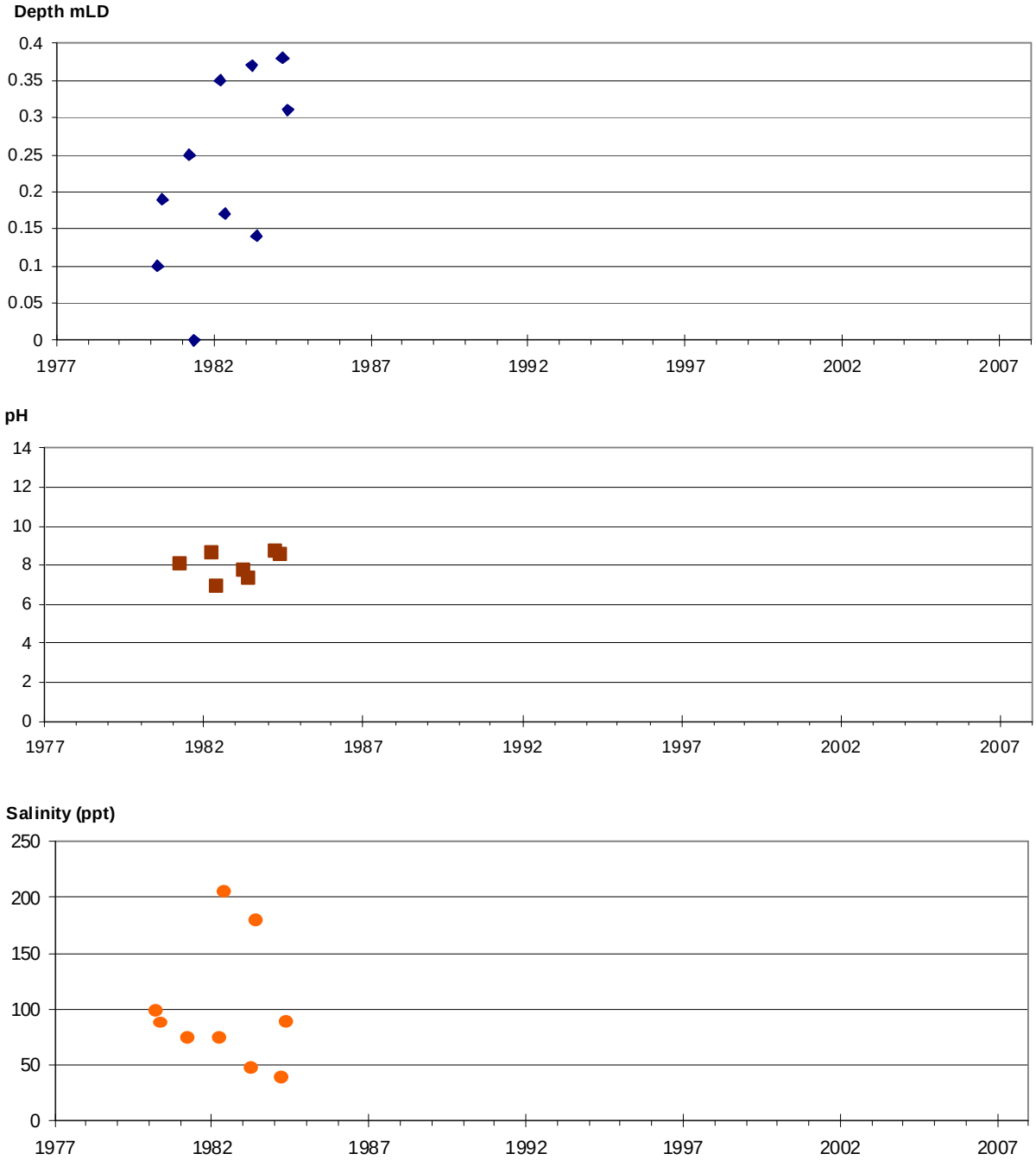
2. Data are from September and November routine monitoring periods only.

CAIRLOCUP



Cairlocup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

CAMEL (H)



Notes:

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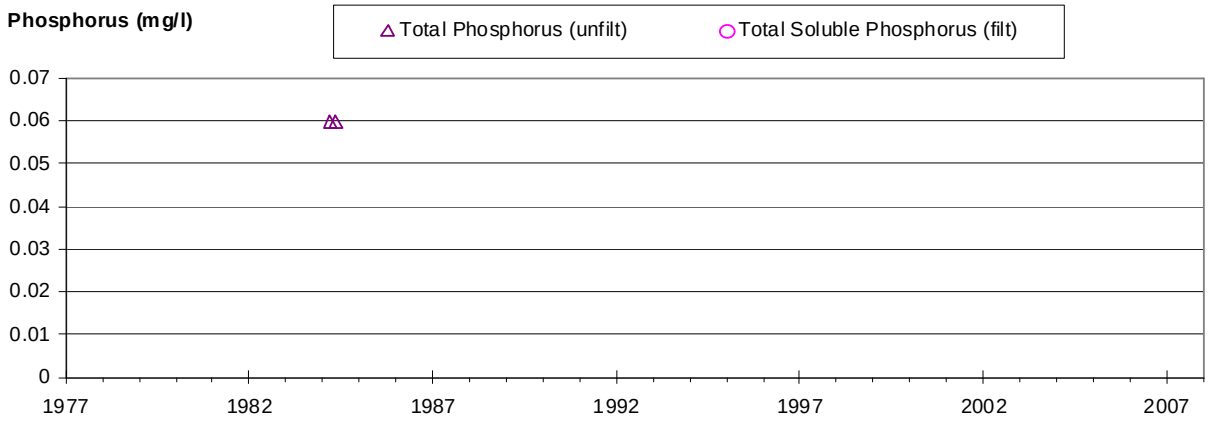
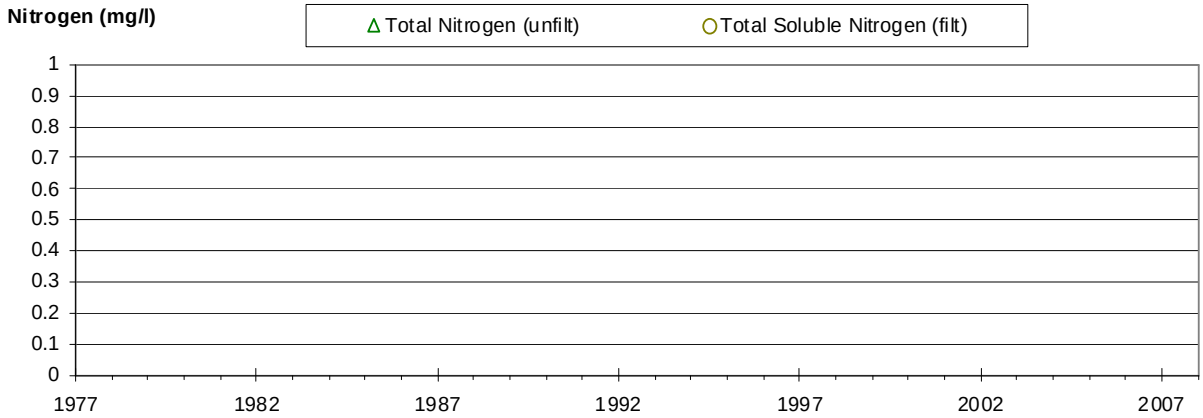
2. Data are from September and November routine monitoring periods only.

CAMEL

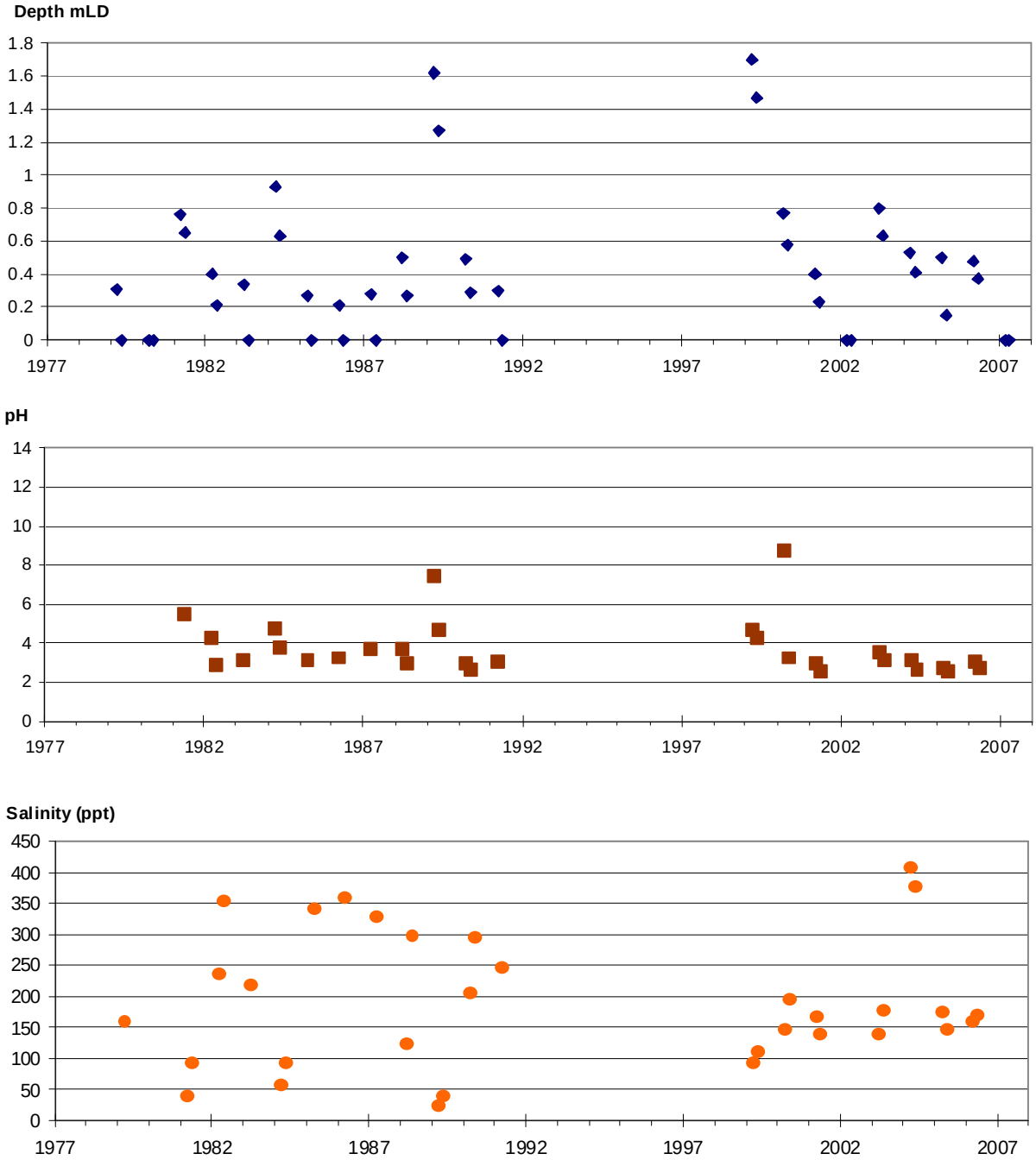




Camel is a component of the 'Balicup Lake System', which is listed in the 'Directory of Important Wetlands in Australia'.

Camel is in the Albany District of the South Coast DEC Region

CAMPION (C, IM)



Notes:

1. Year labels are positioned at 1st July each year.
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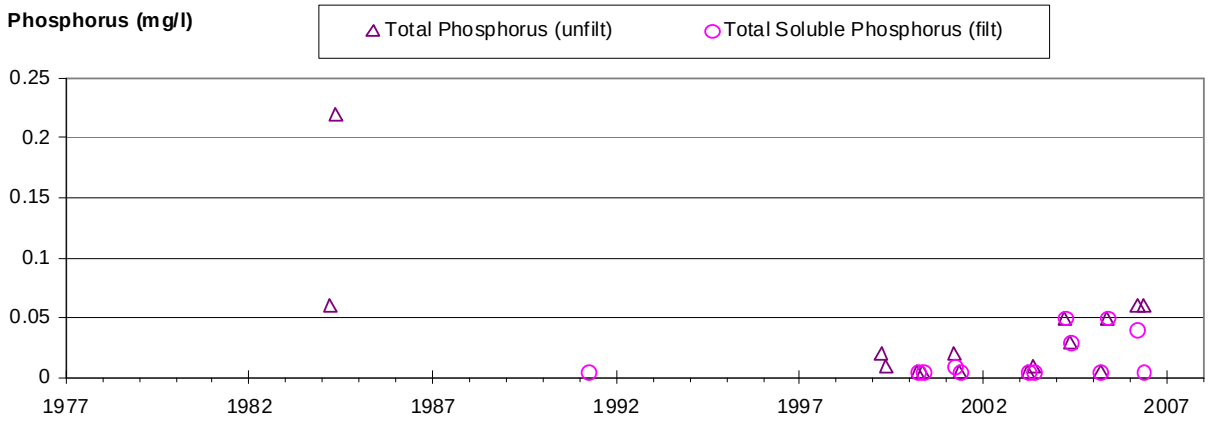
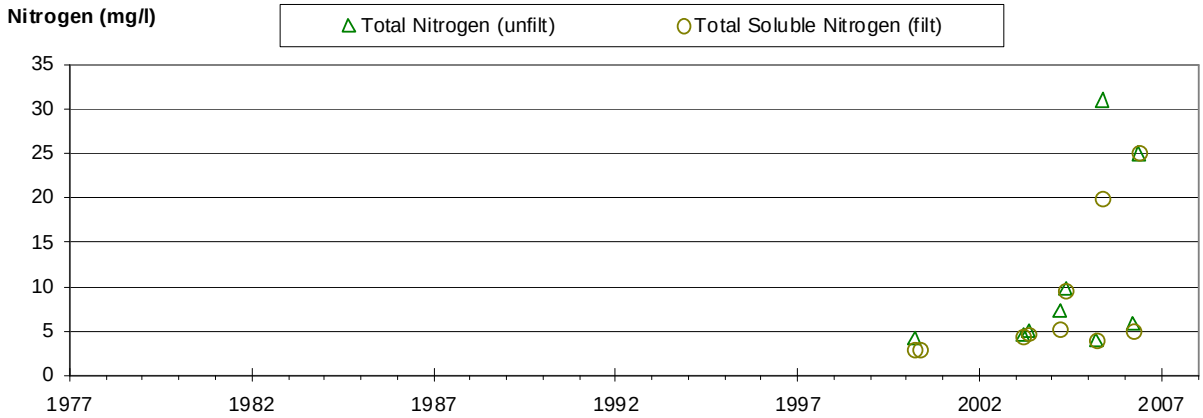
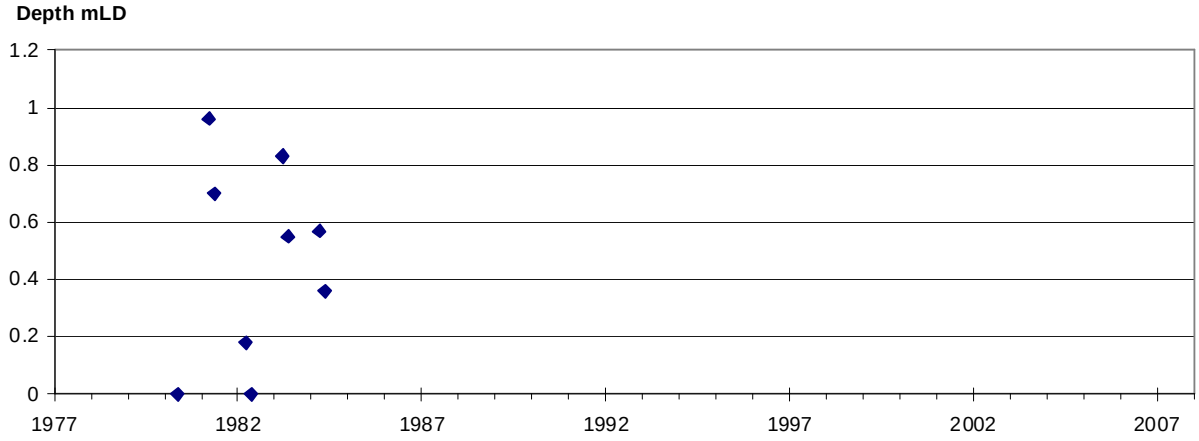
CAMPION

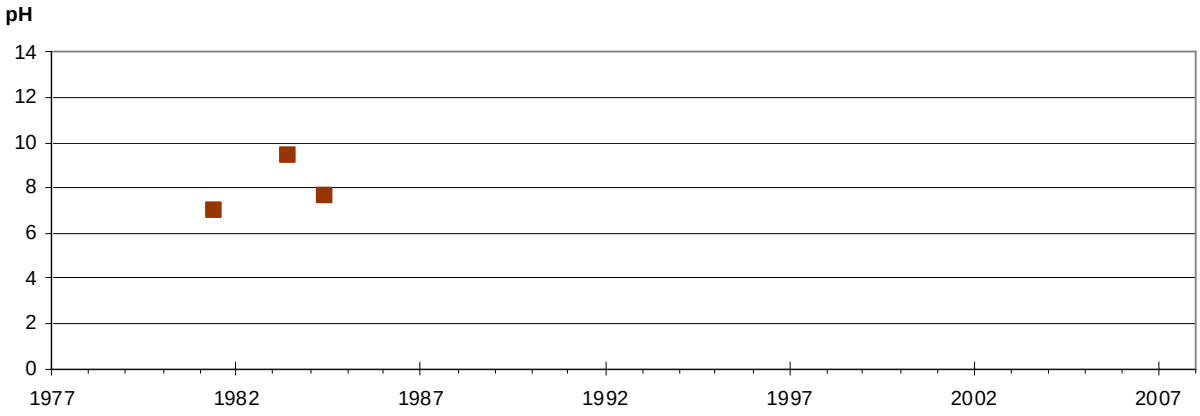


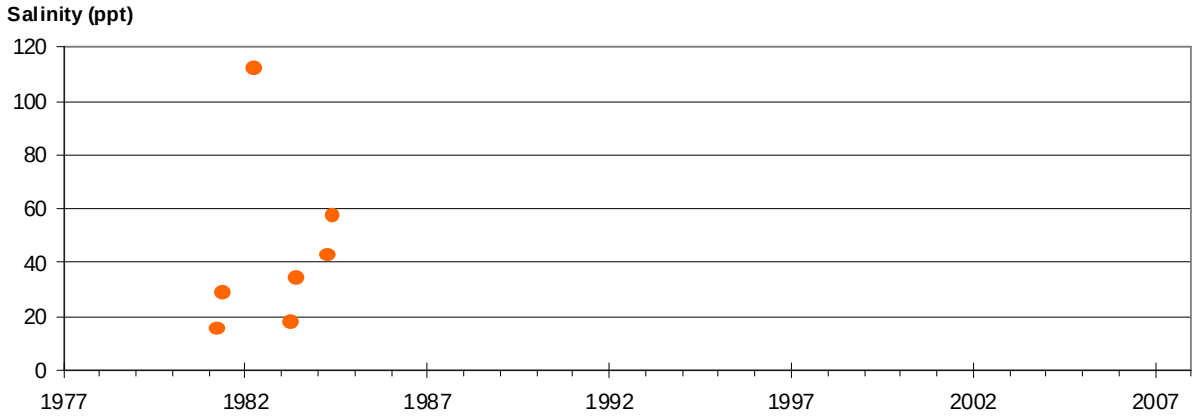


Campion is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

CAPAMAURA (H)







Notes:
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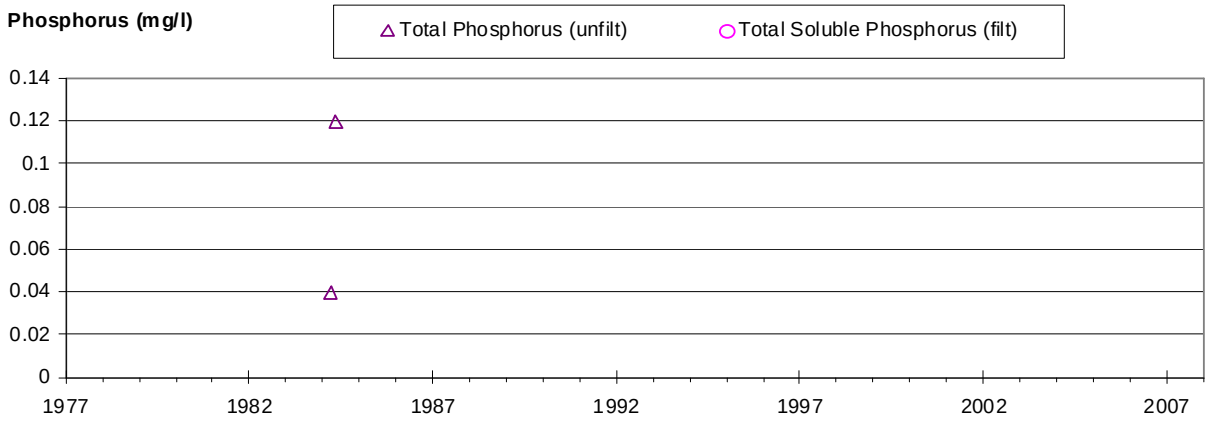
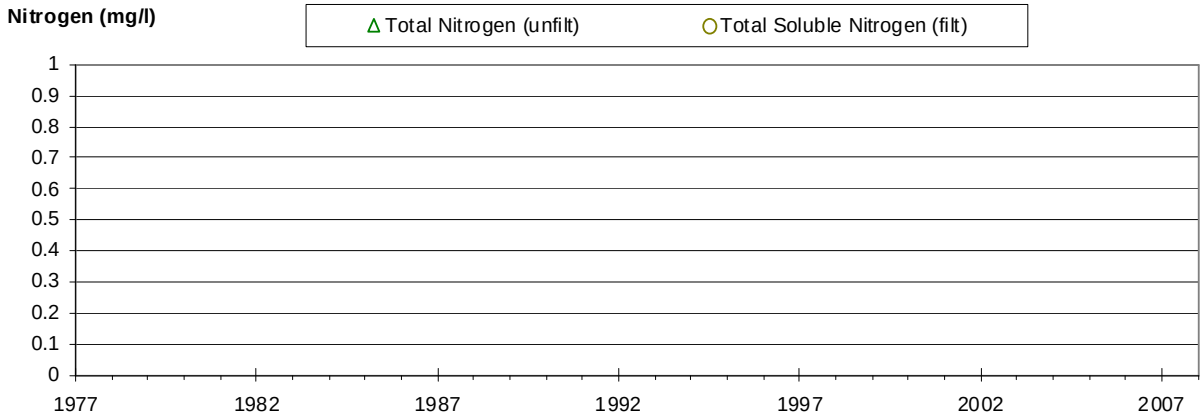
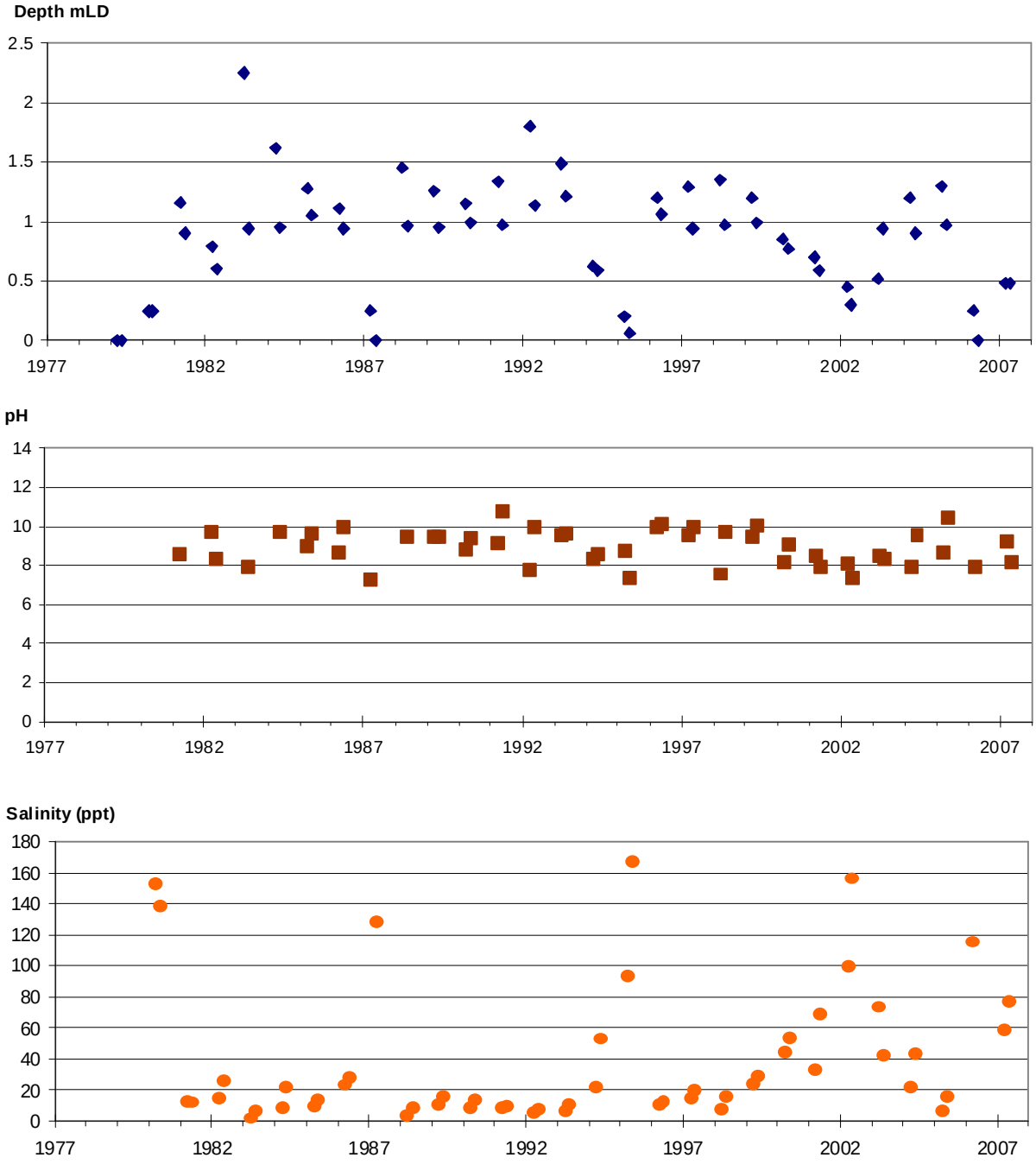
CAPAMAURA





Capamaura is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

CASUARINA (C)



Notes:

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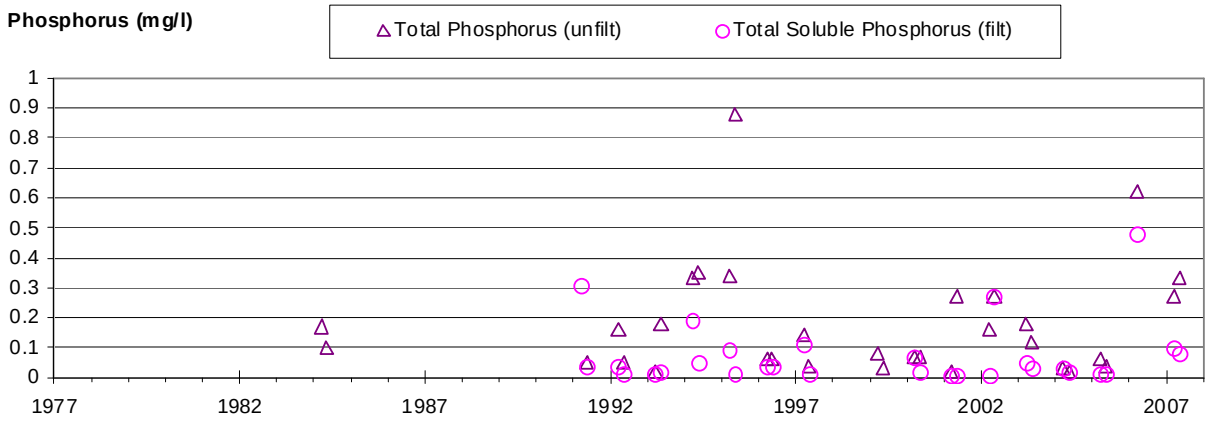
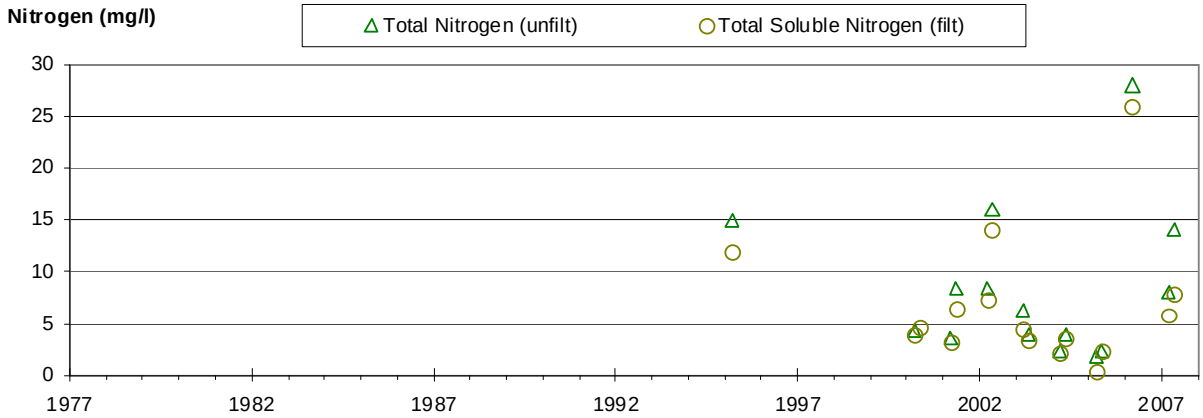
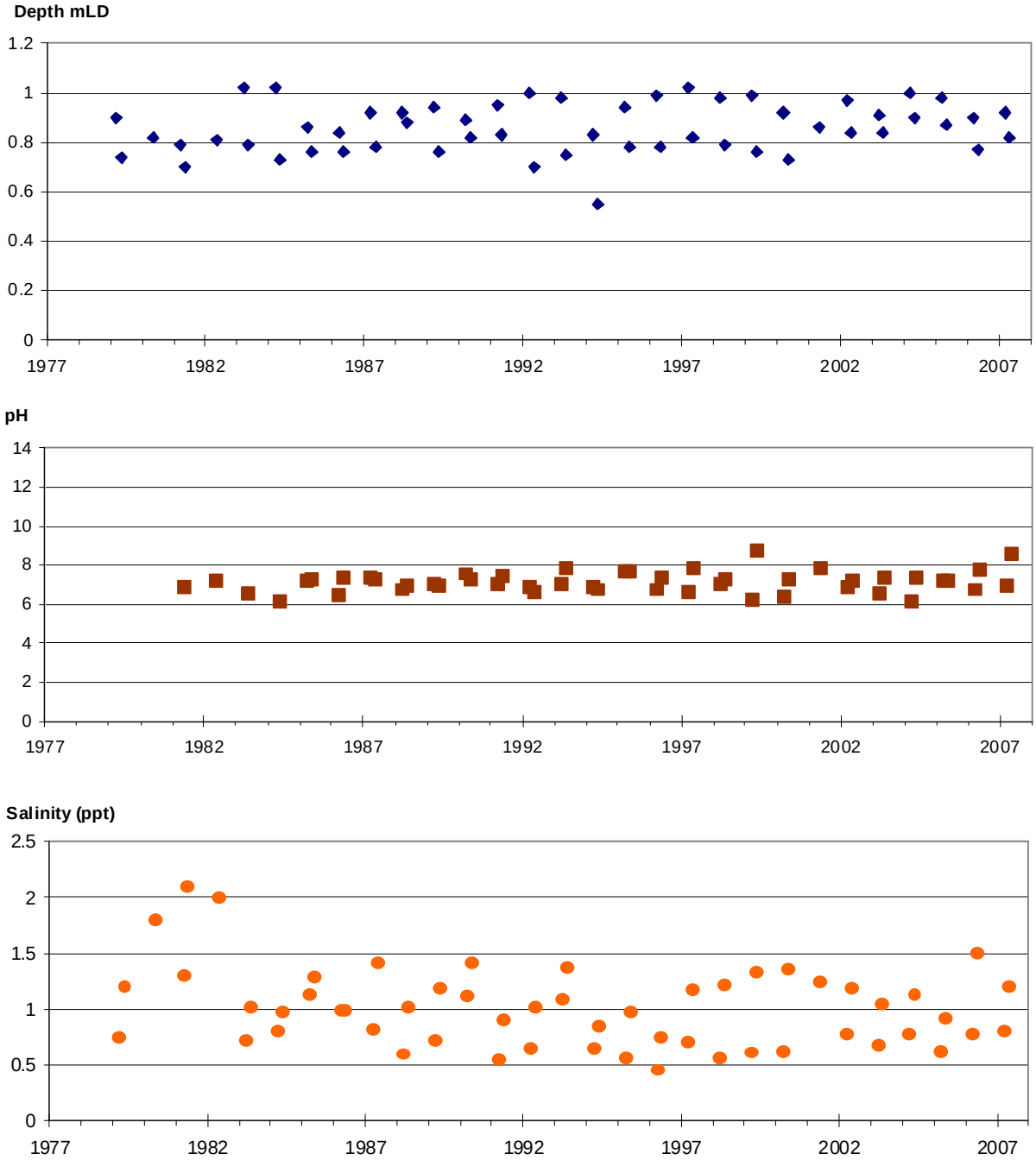
CASUARINA





Casuarina is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

CHANDALA (C)



Notes:

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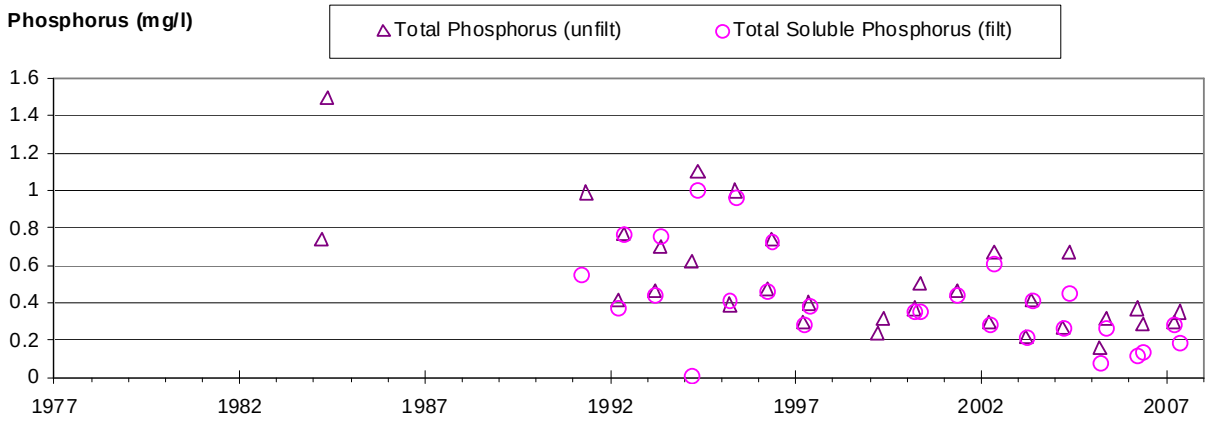
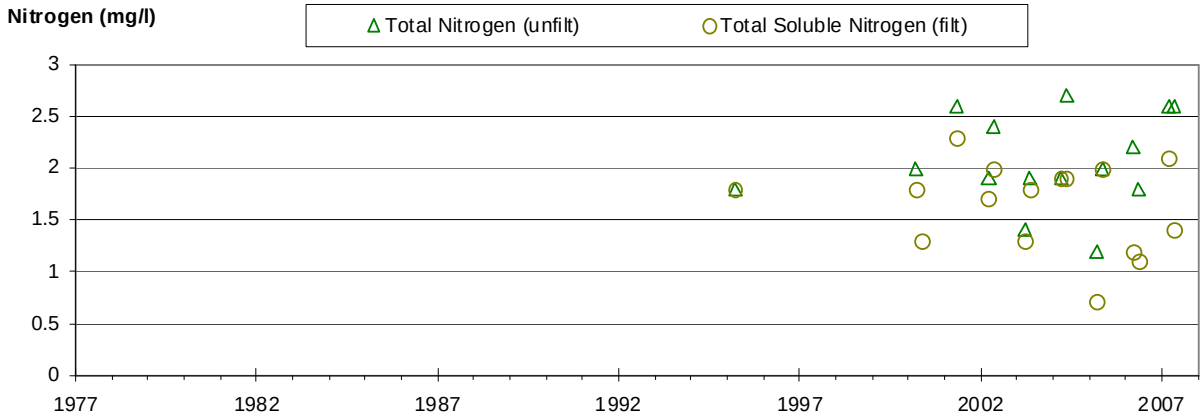
CHANDALA

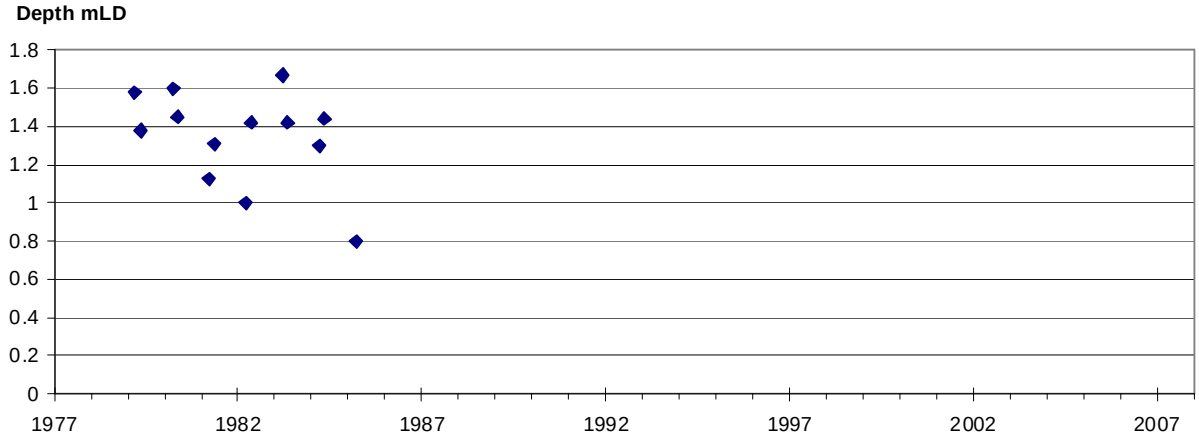


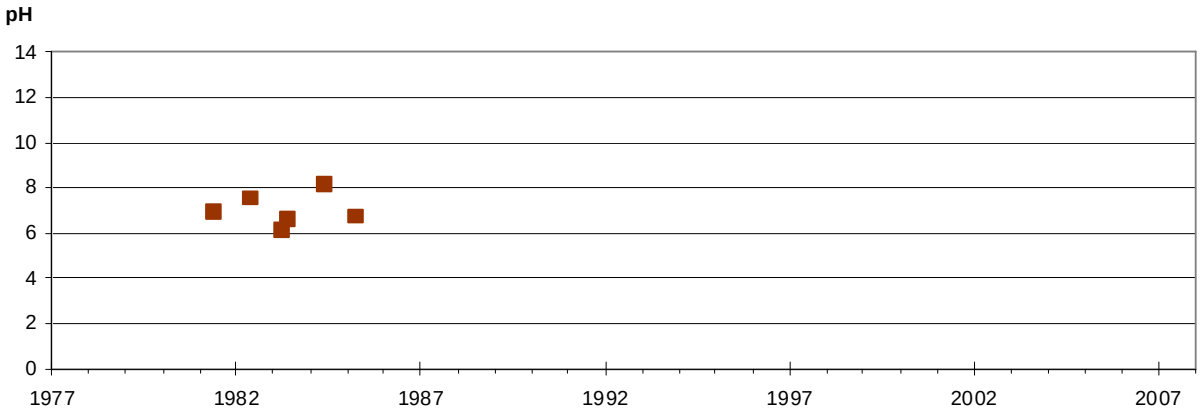


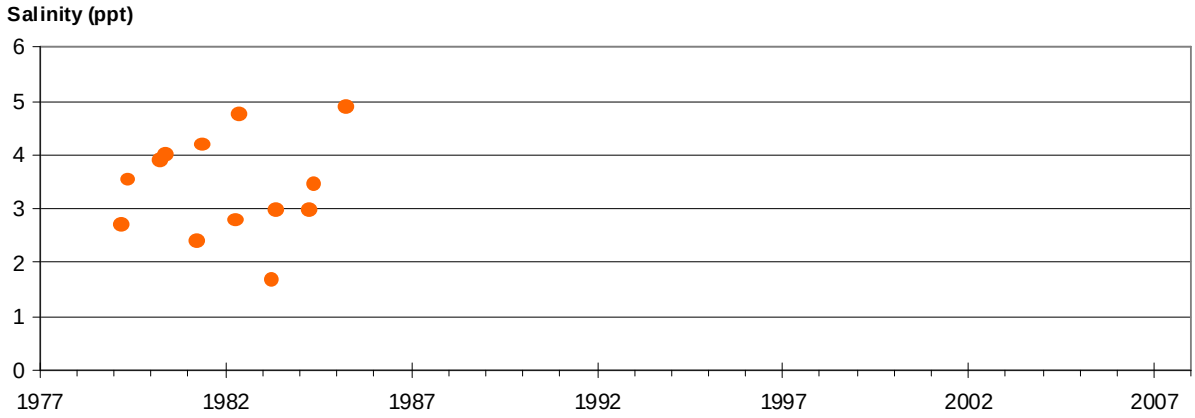
Chanadala Swamp is listed in the 'Directory of Important Wetlands in Australia'.

Chandala is in the Perth Hills District (headquartered in Mundaring) of the Swan DEC Region.

CHITTERING (H)







Notes:
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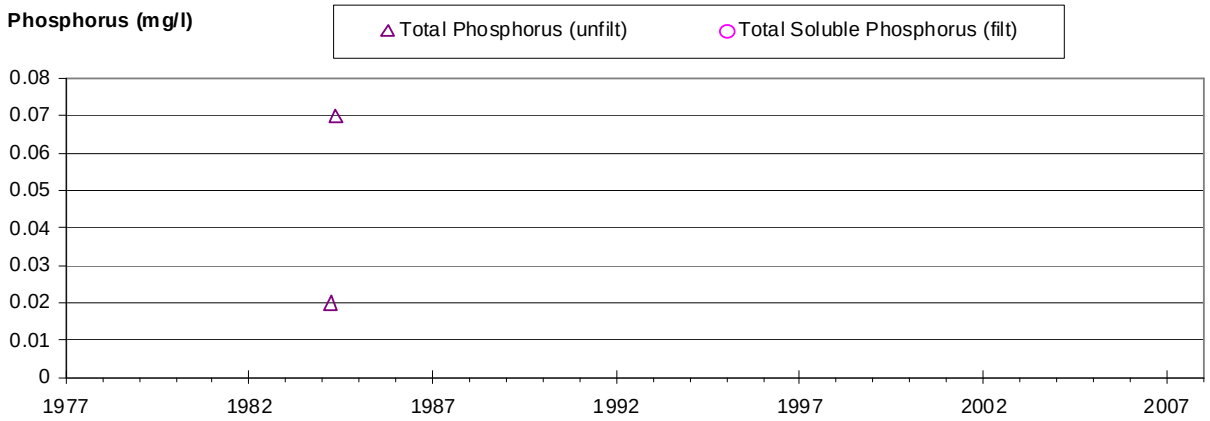
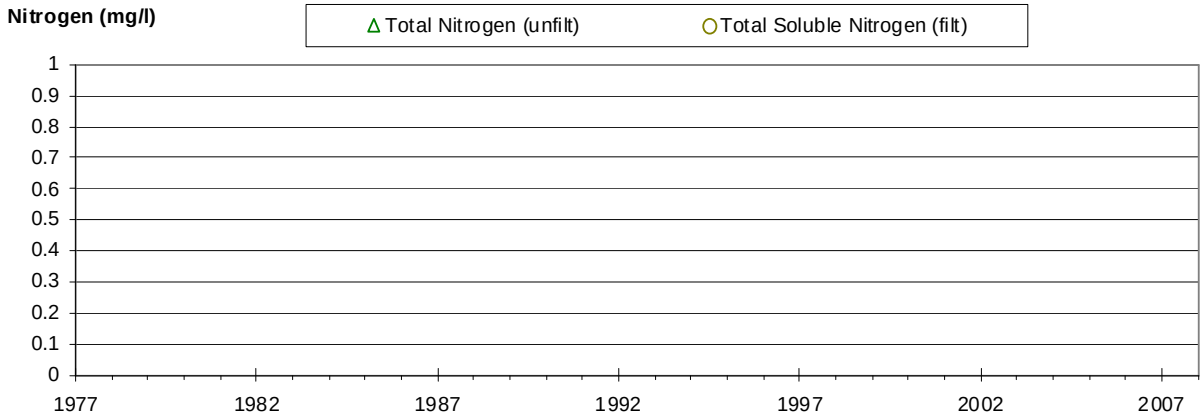
CHITTERING

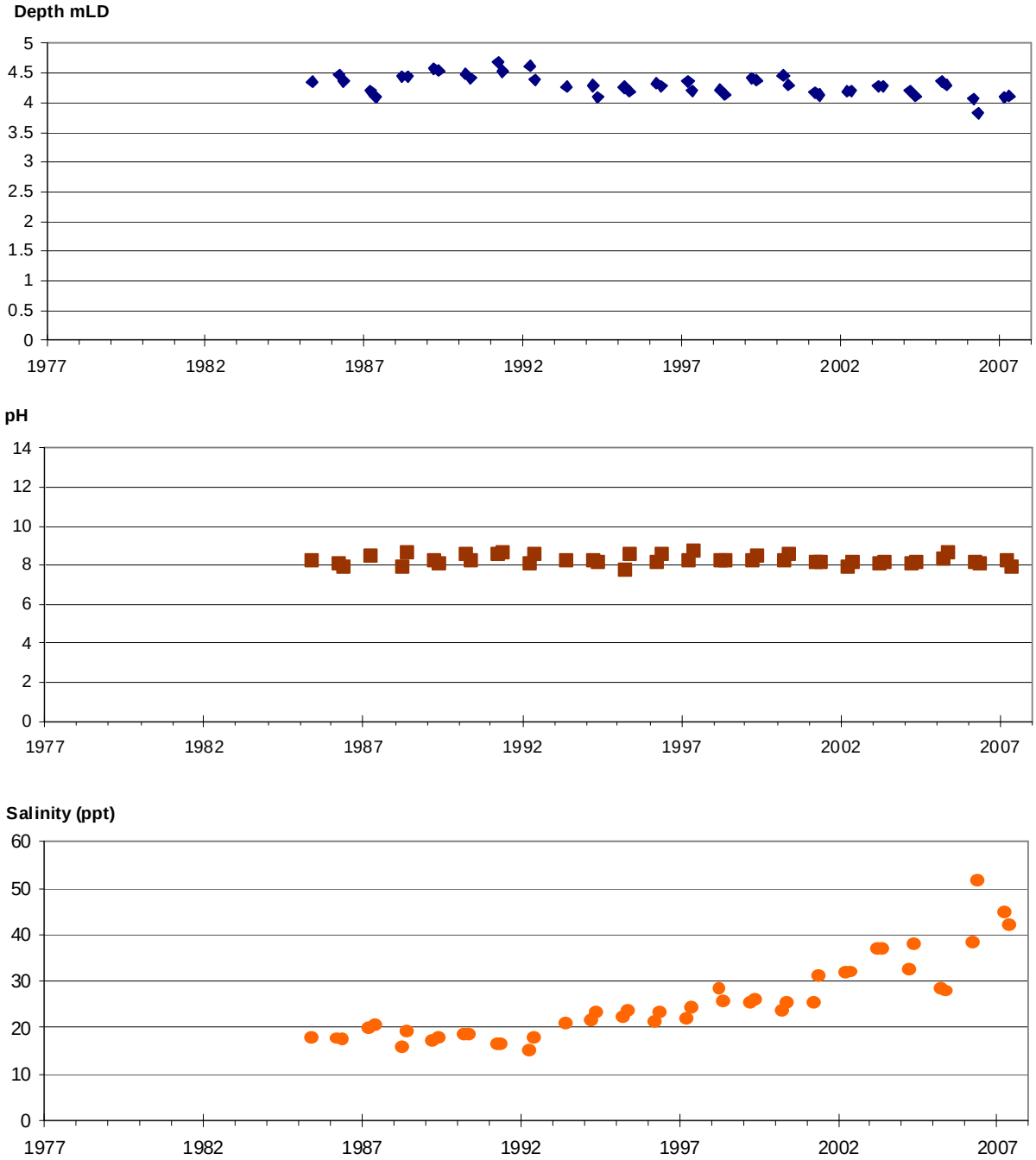




Chittering is a component of the 'Chittering-Needonga Lakes' system, which is listed in the 'Directory of Important Wetlands in Australia'.

Chittering is in the Perth Hills District (headquartered in Mundaring) of the Swan DEC Region.

CLIFTON (C)



Notes:

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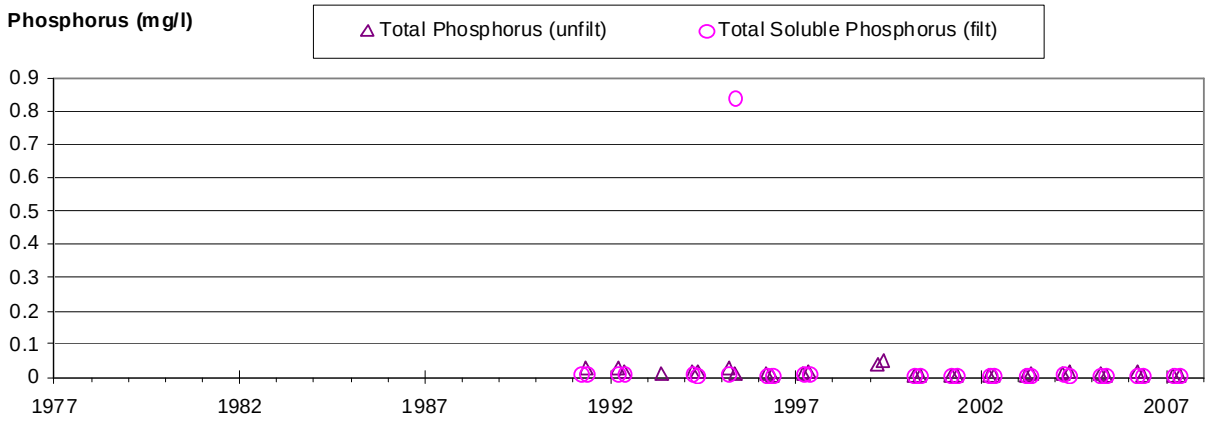
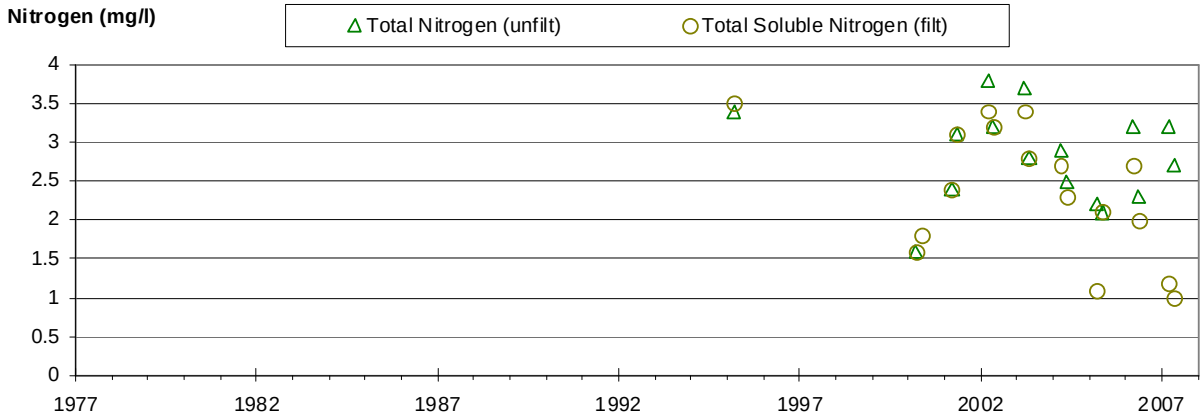
CLIFTON



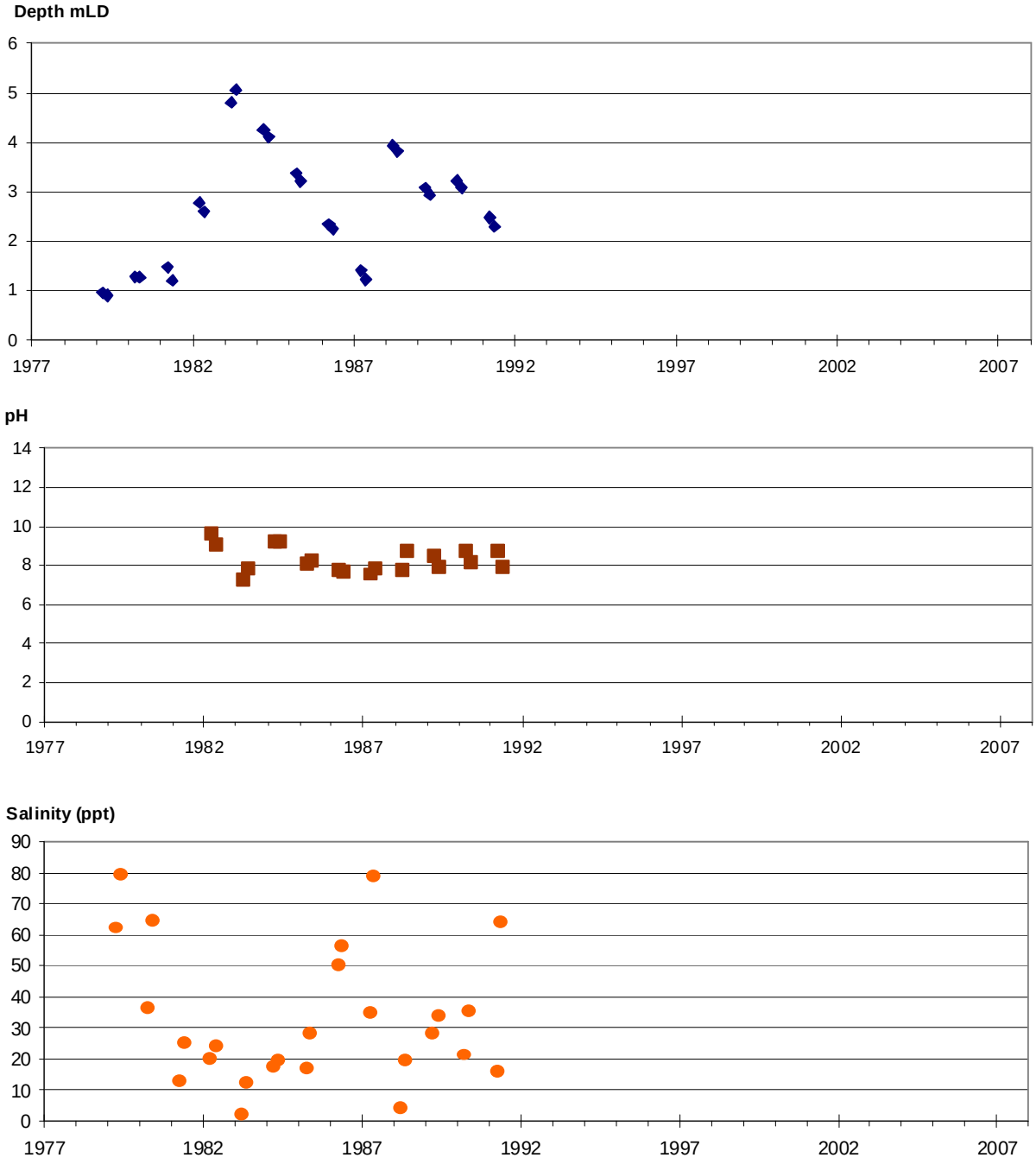


Clifton is a component of the 'Peel-Yalgorup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Clifton is also a component of the 'Yalgorup Lakes System', which is listed in the 'Directory of Important Wetlands in Australia'.

Clifton is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

COBLININE (H)



Notes:

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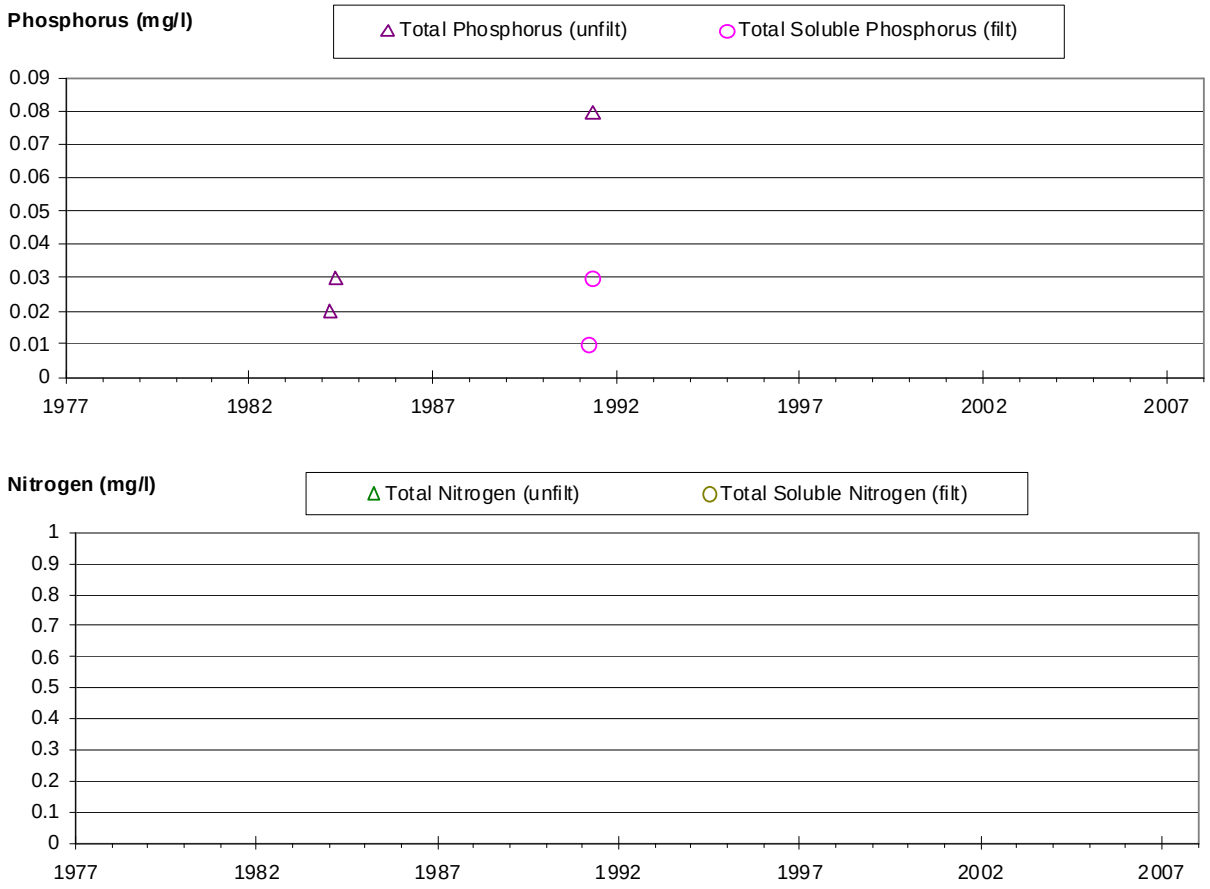
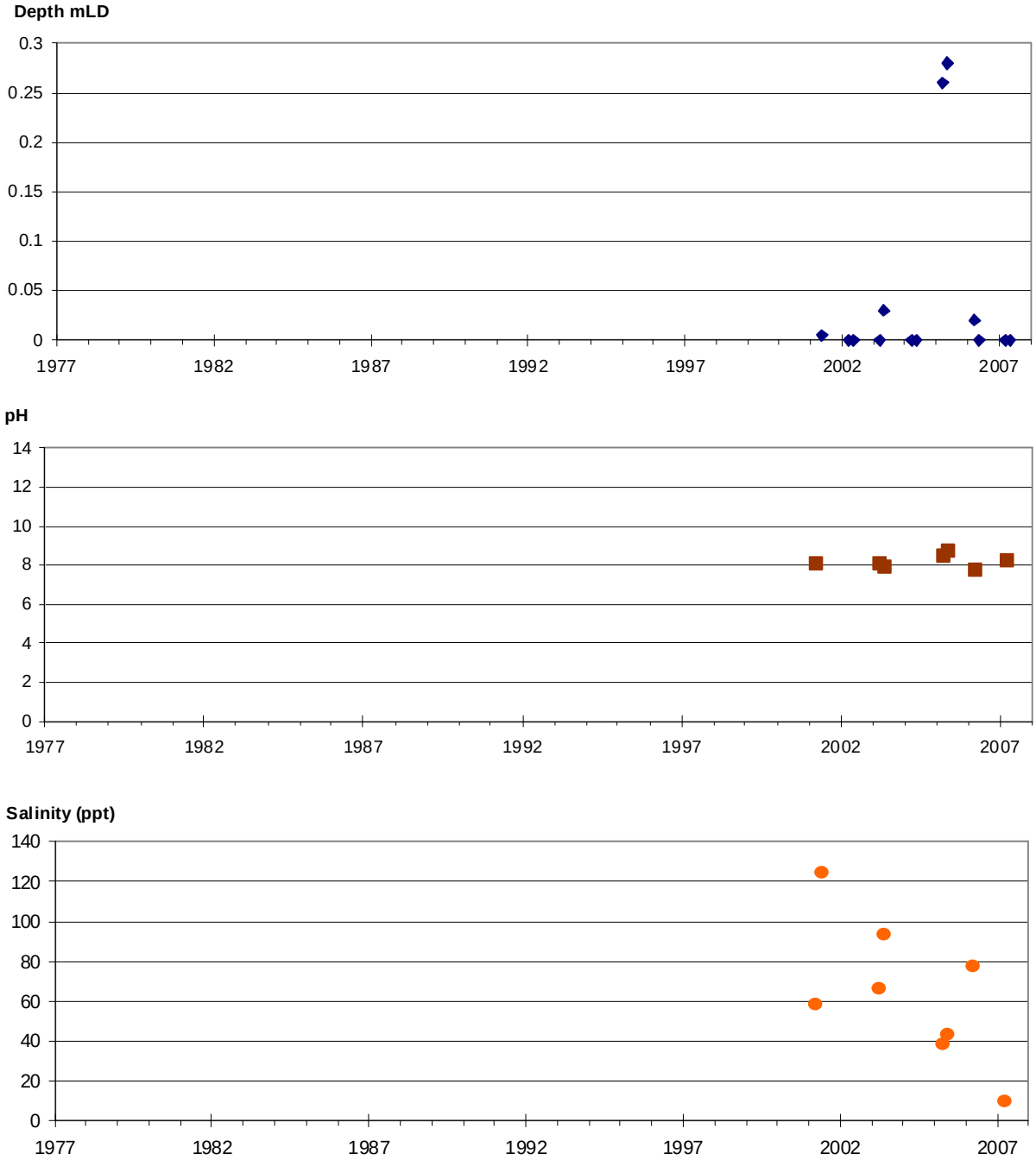
COBLINE



Coblinine is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

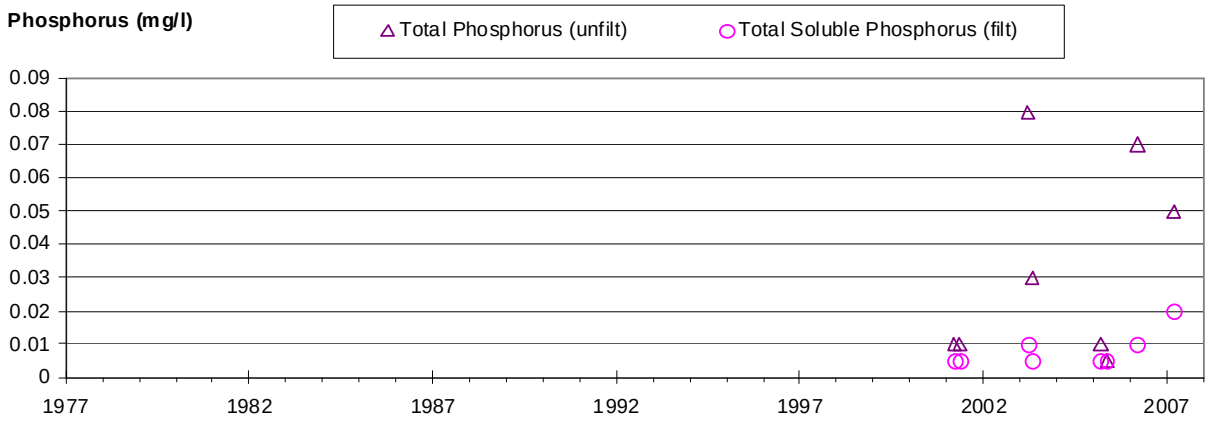
COLLETS ROAD (C)

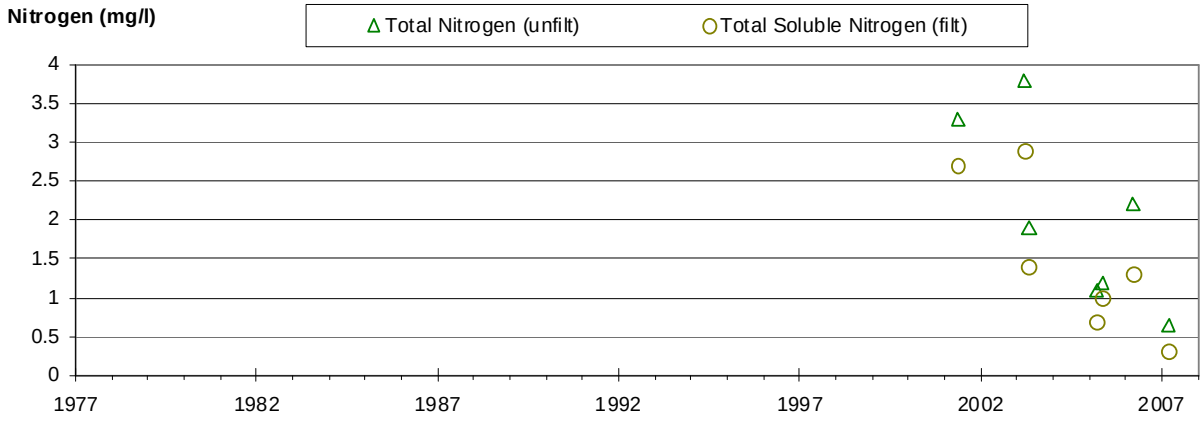


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

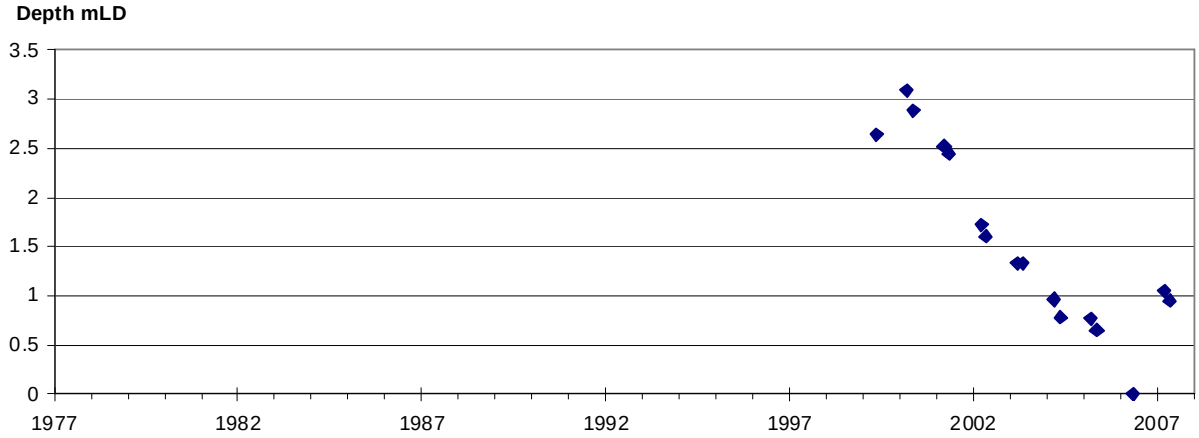
COLLETS ROAD

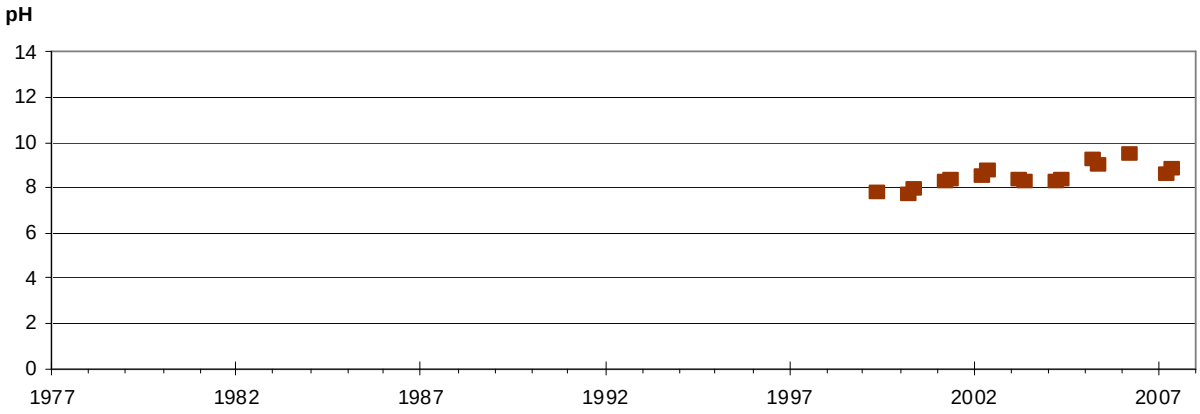


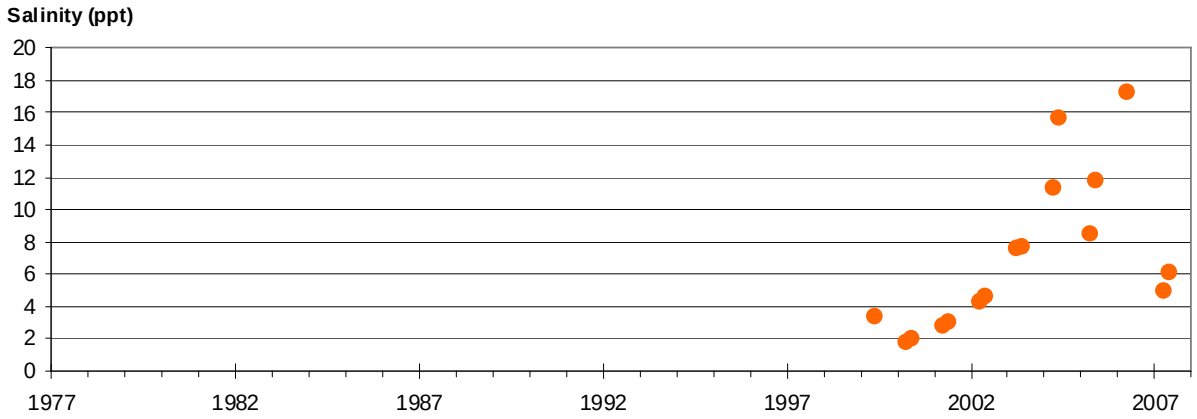


Colletts Road Swamp is in the Albany District of the South Coast DEC Region

COOMALBIDGUP (C, IM)







Notes:
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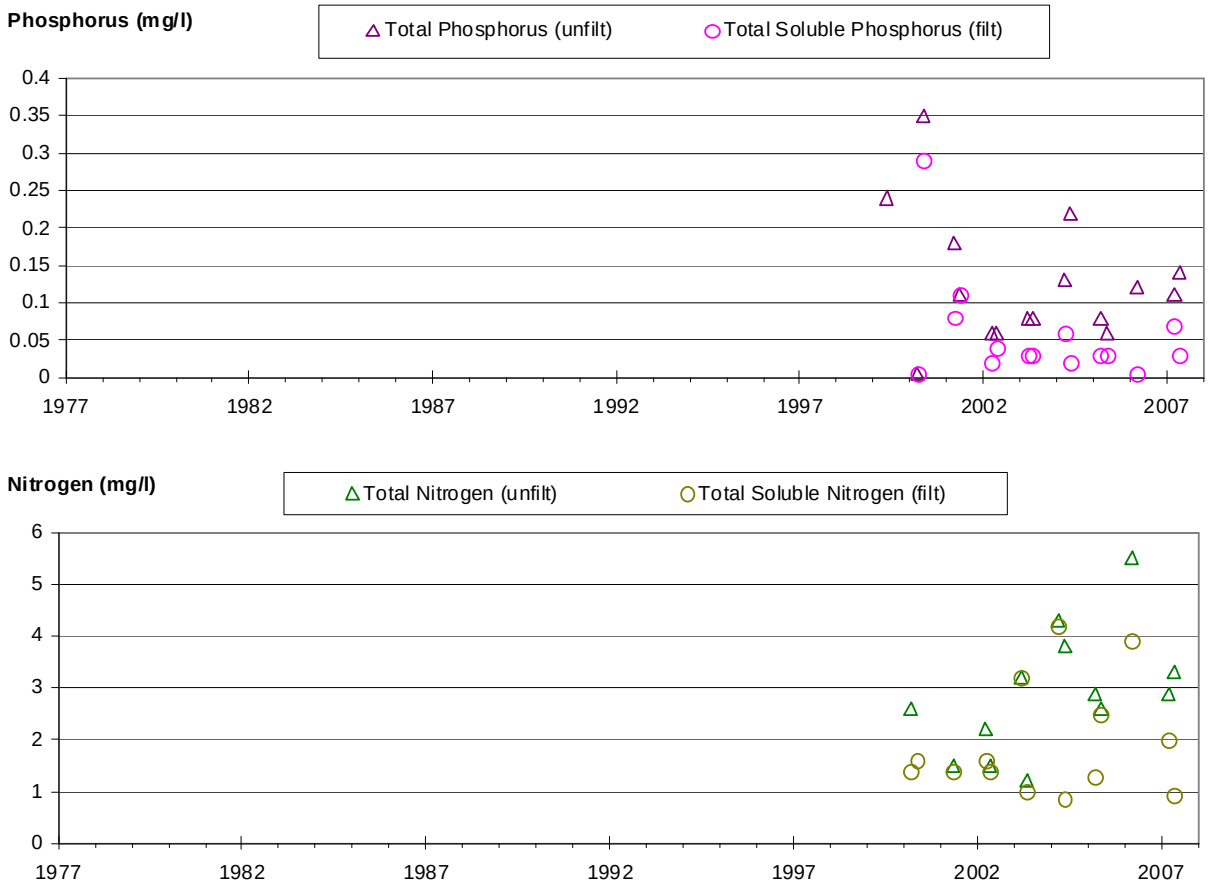
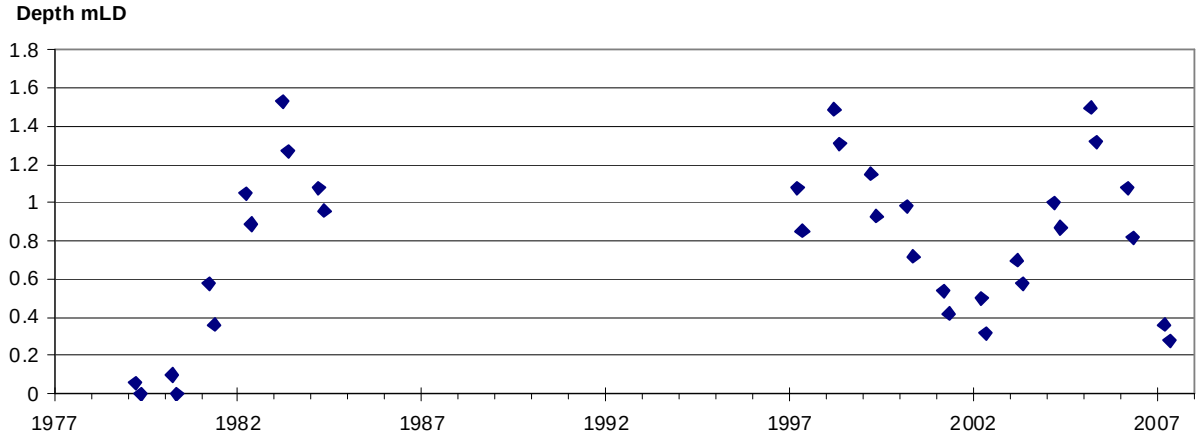
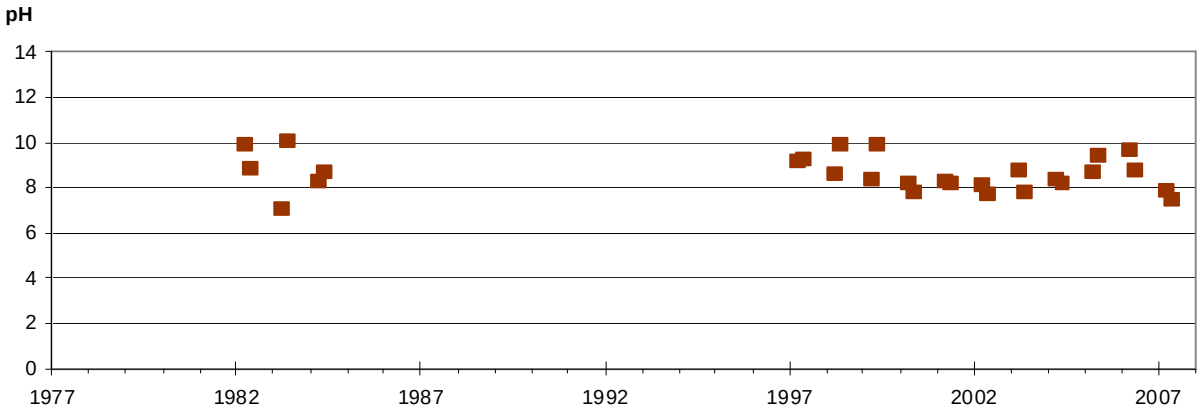
COOMALBIDGUP

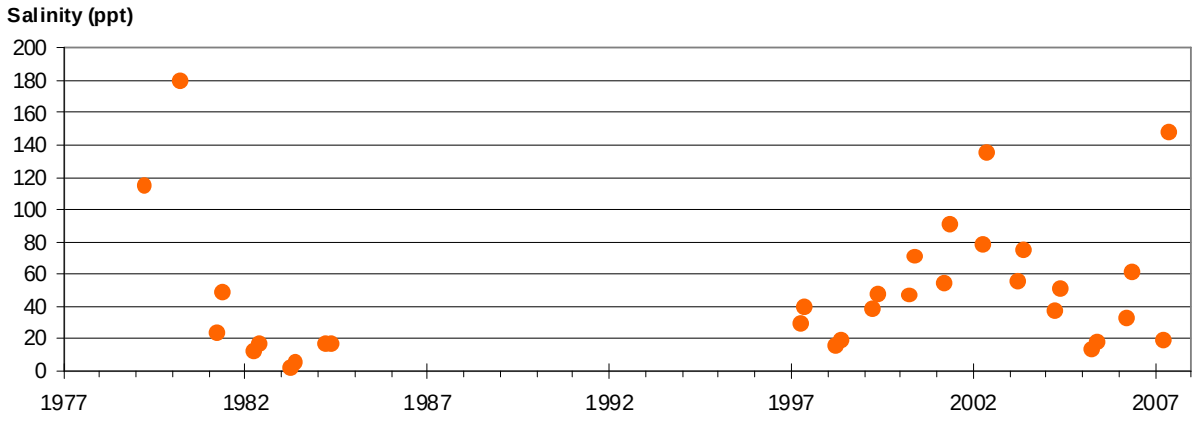


Coomalbidgup is in the Esperance District of the South Coast DEC Region.

COOMELBERRUP (C, IM)







Notes:
1. Year labels are positioned at 1st July each year.
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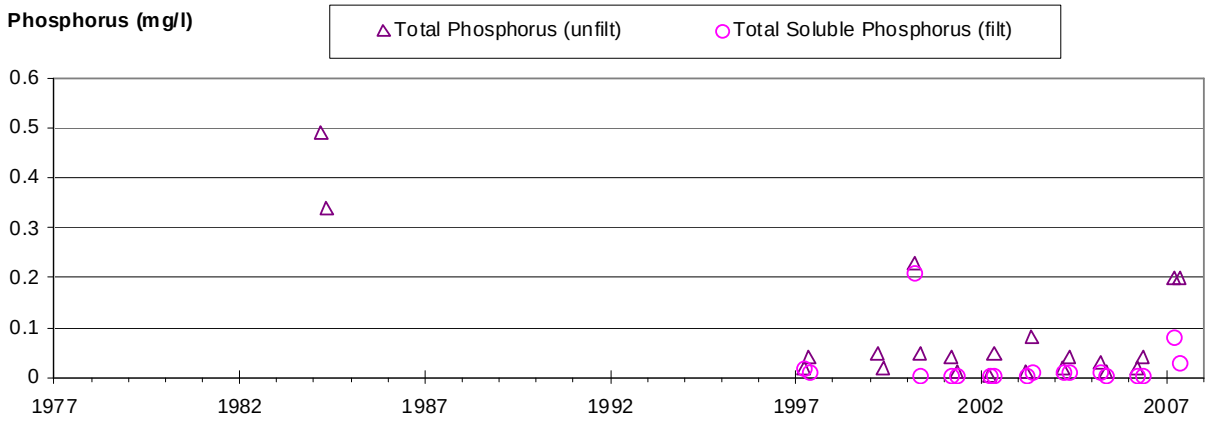
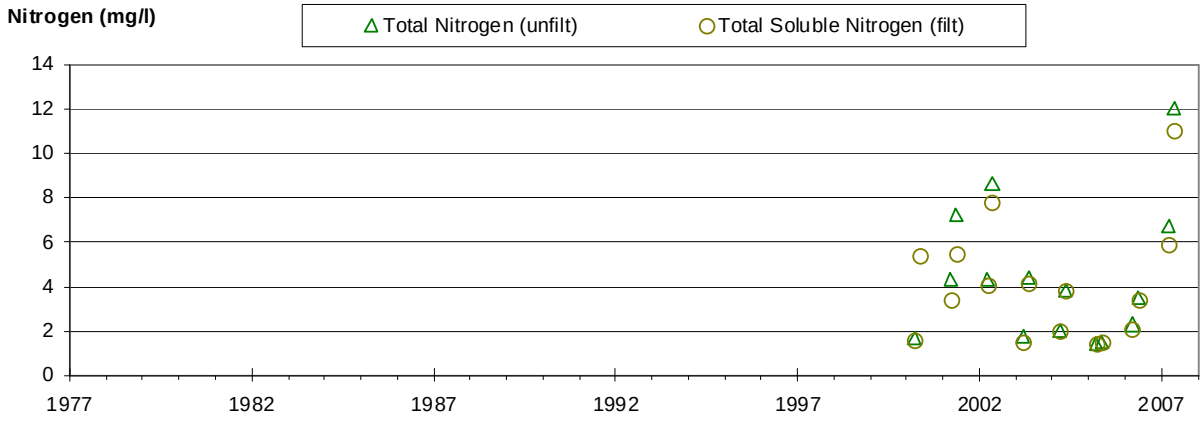
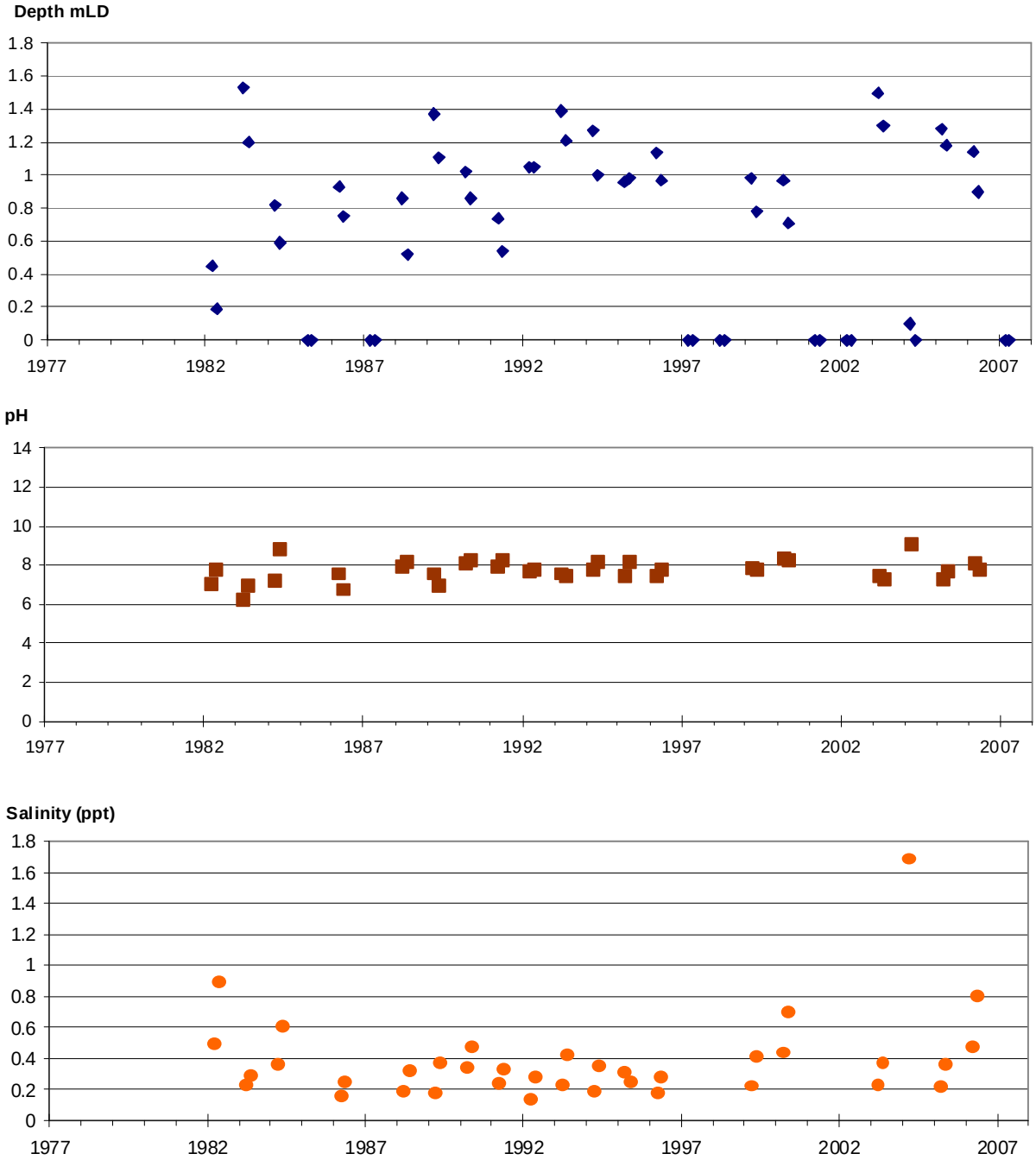
COOMELBERRUP





Coomelberrup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

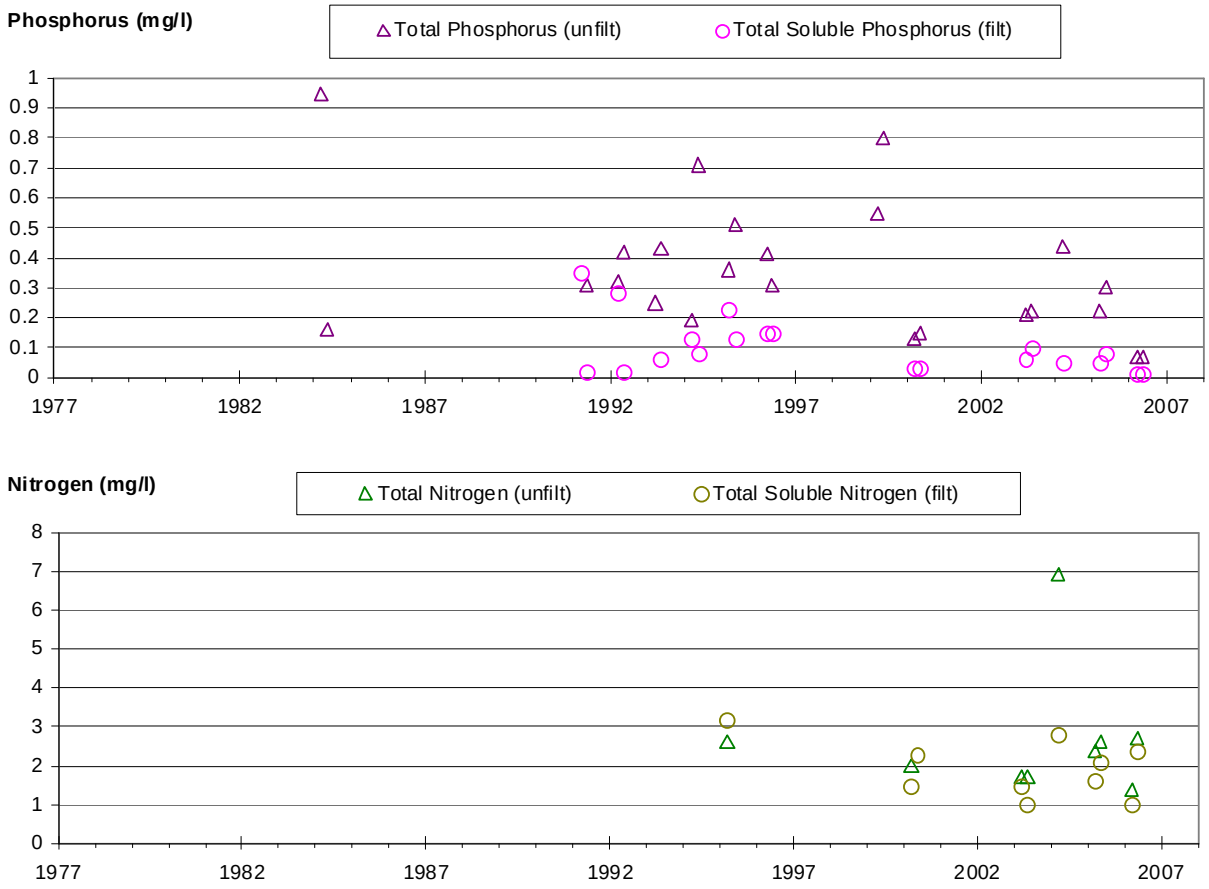
CORRIGIN 12900 (C, IM)



Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

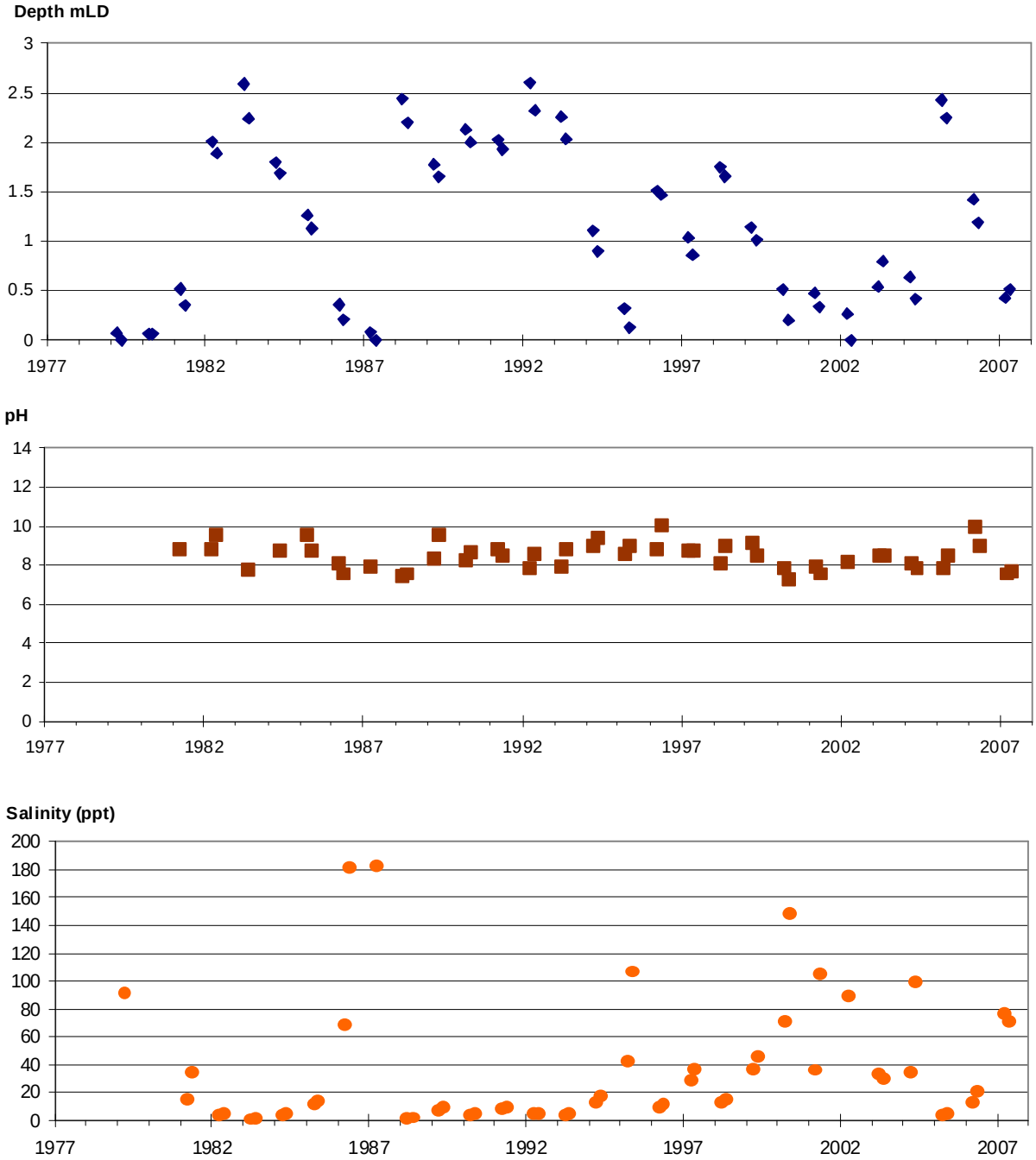
CORRIGIN 12900



Corrigin 12900 is also known as Paperbark Swamp.

Corrigin 12900 is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

COYRECUP (C, IM)



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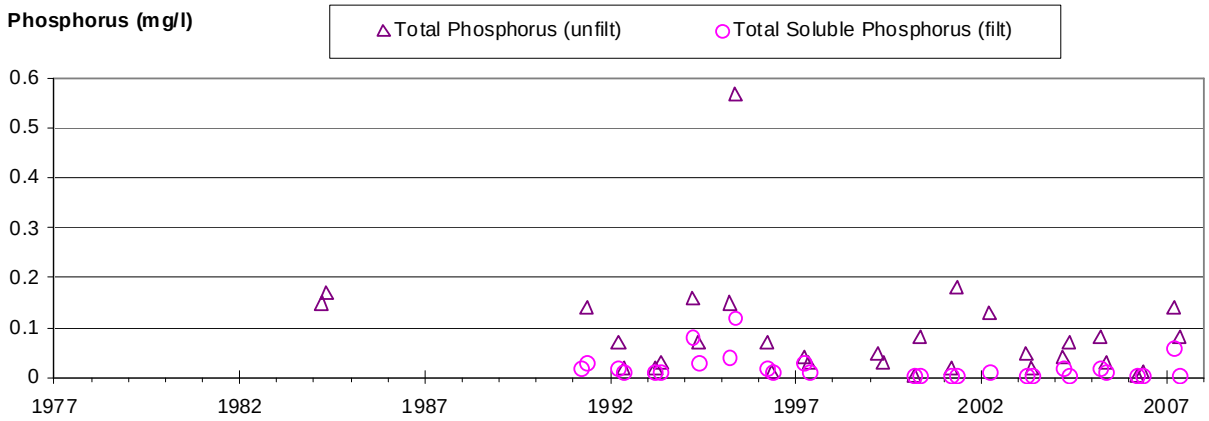
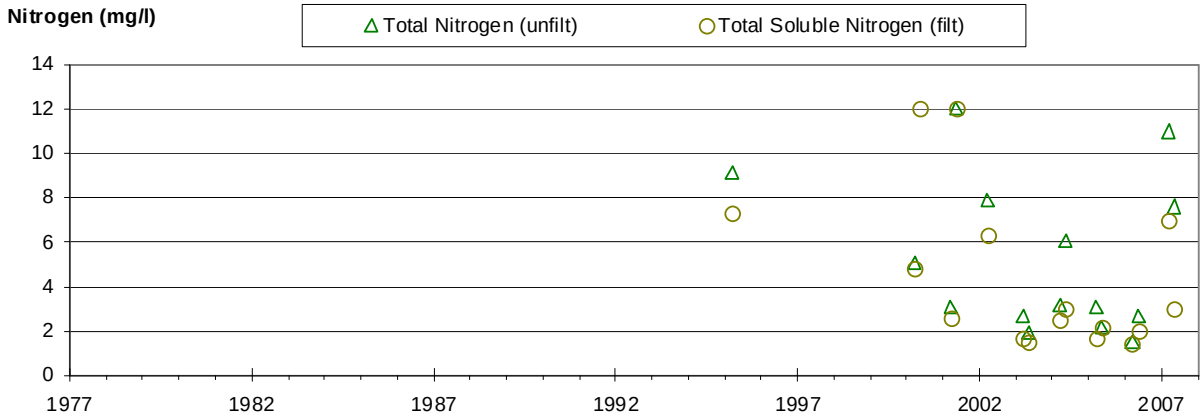
2. Data are from September and November routine monitoring periods only.

COYRECUP

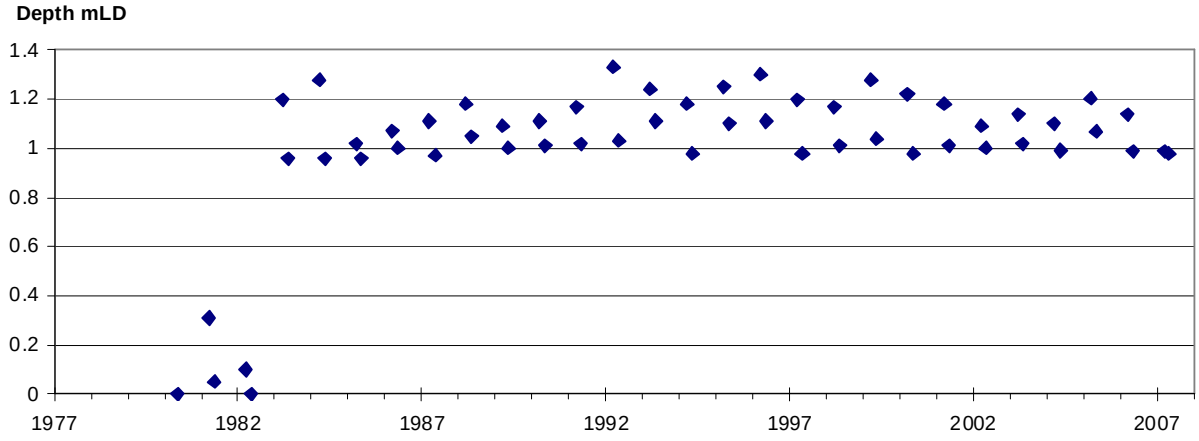


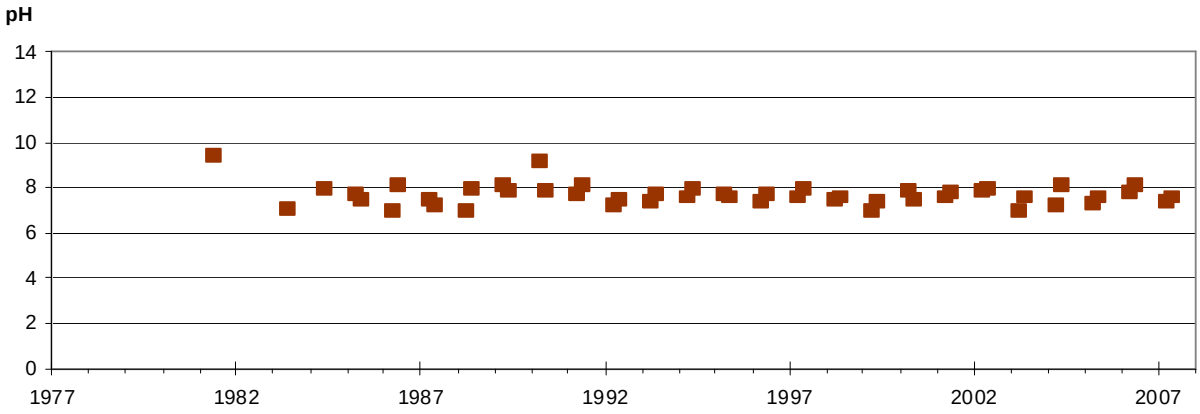


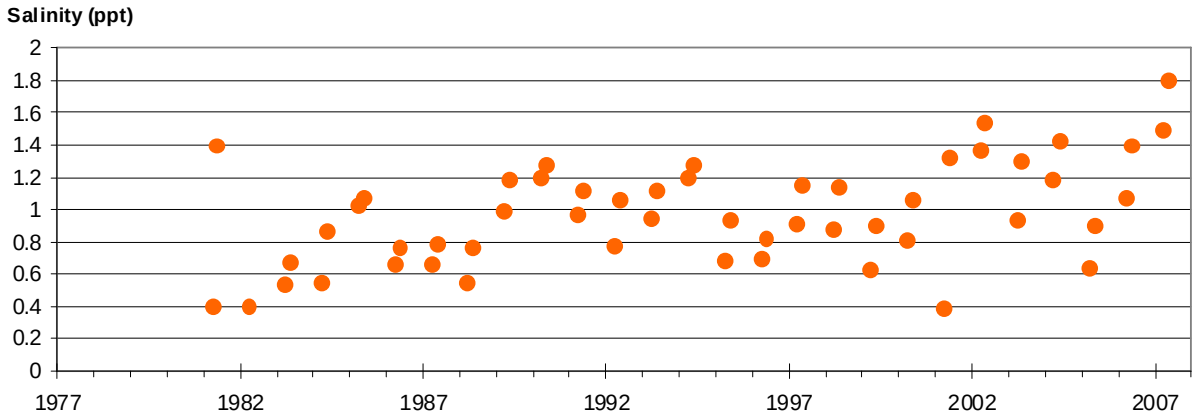
Coyrecup Lake is listed in the 'Directory of Important Wetlands in Australia'.

Coyrecup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

CRACKERS (C)

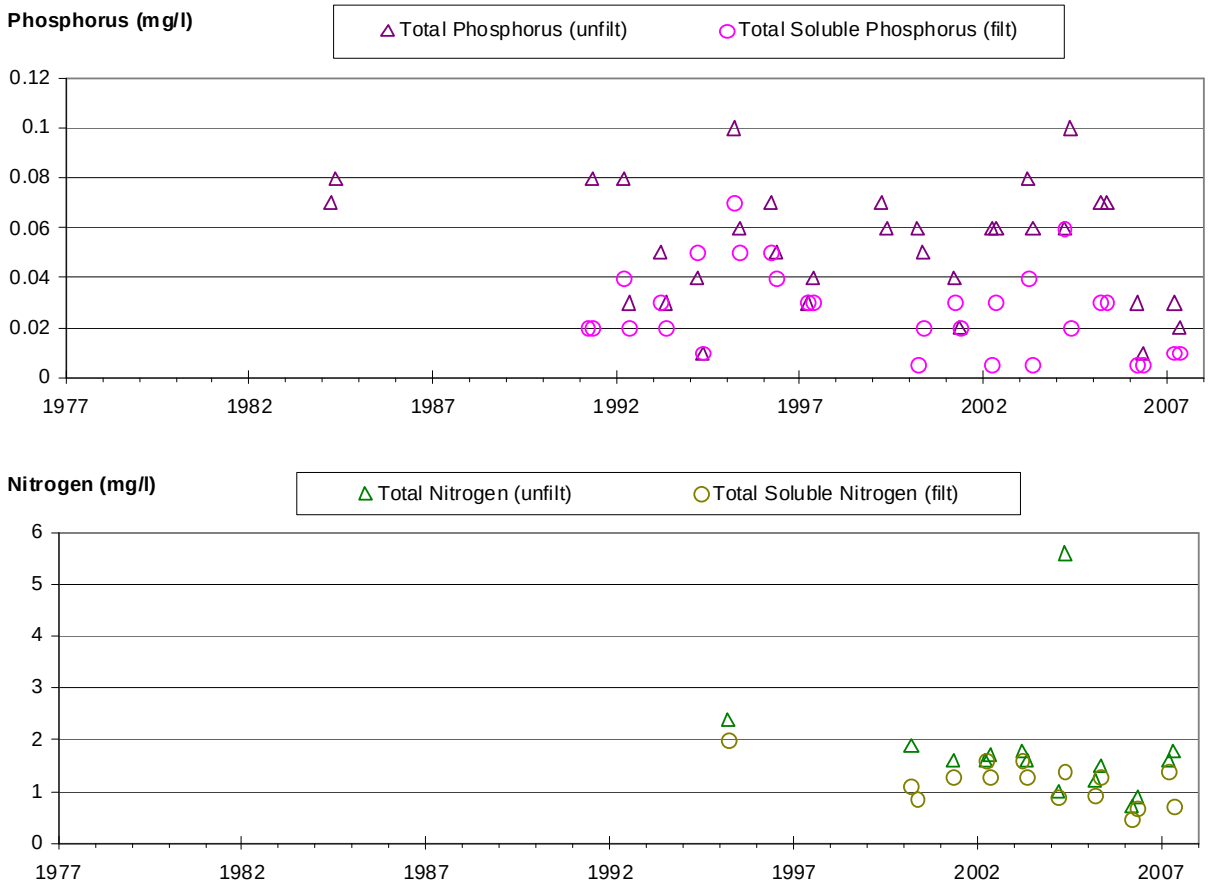






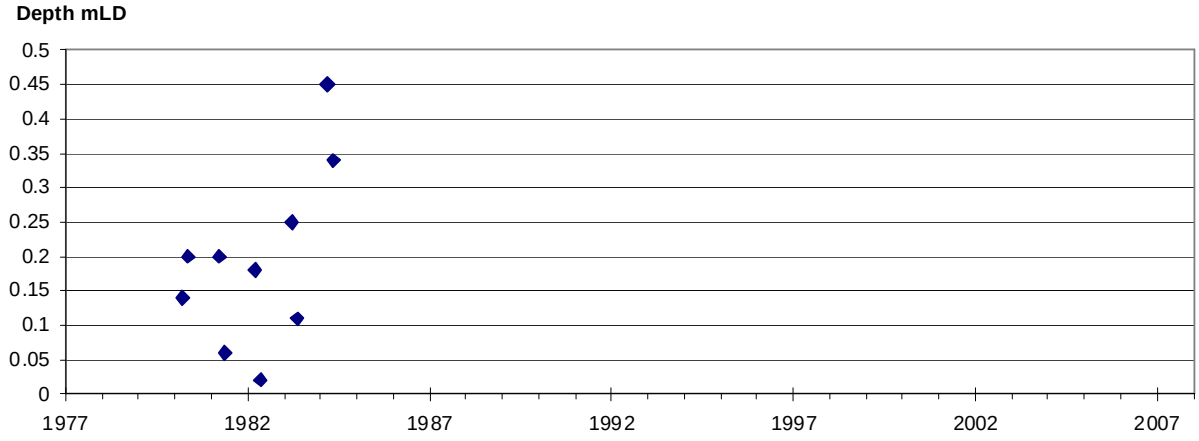
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

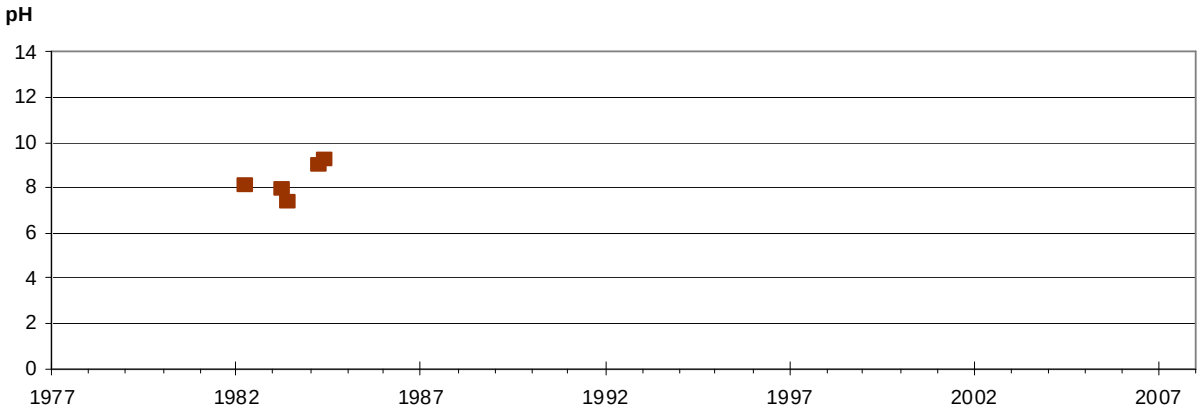
CRACKERS

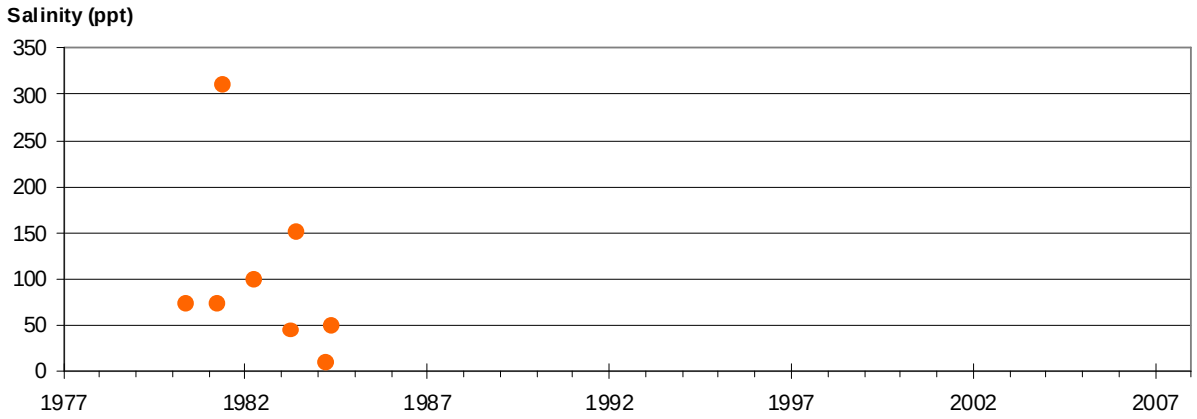


Crackers is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

CRANBROOK 25812 (H)

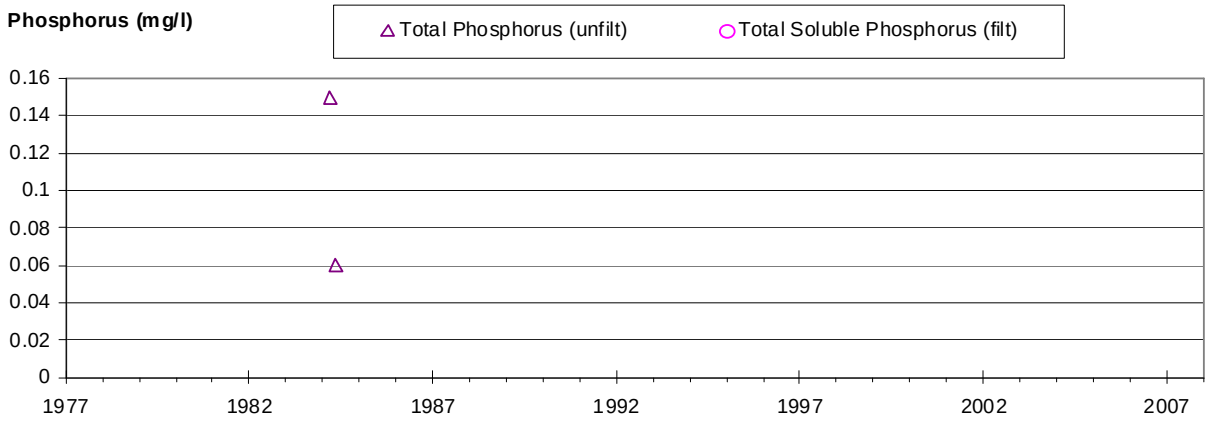


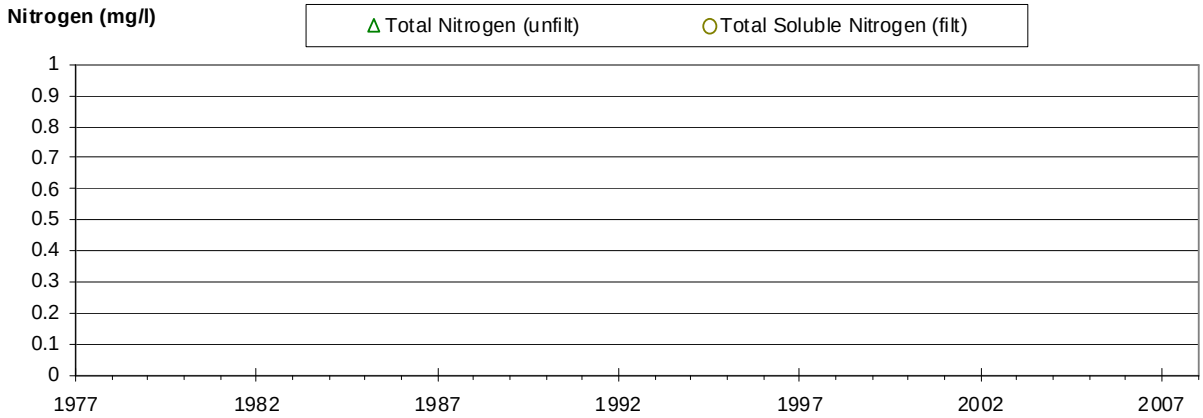




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

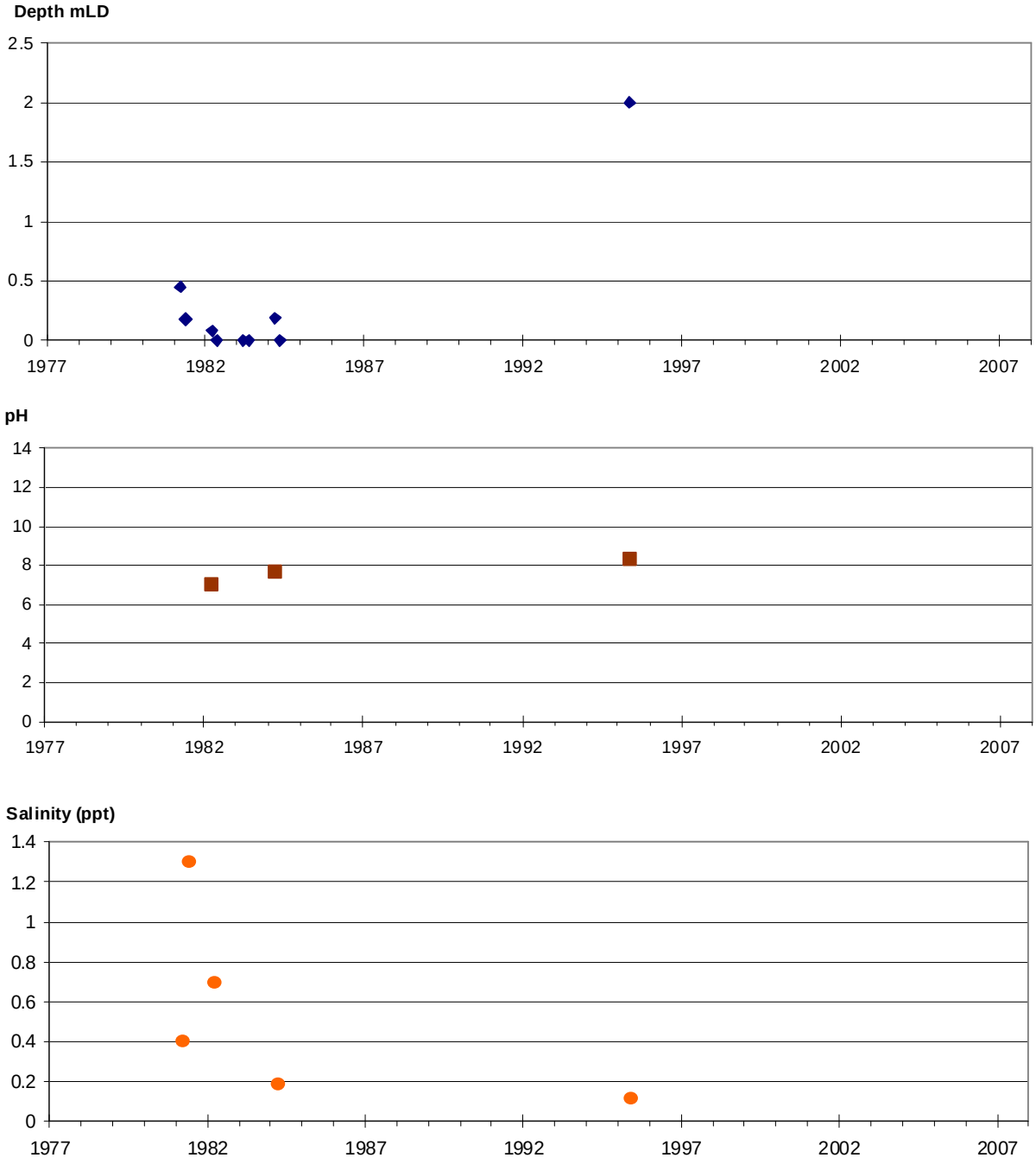
CRANBROOK 25812





Cranbrook 25812 is in the Albany District of the South Coast DEC Region

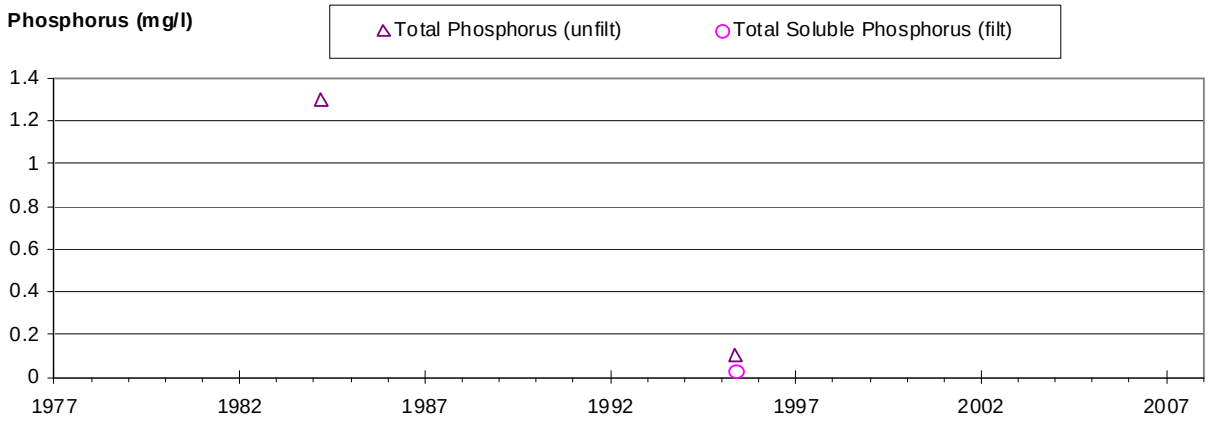
CRONIN (H)

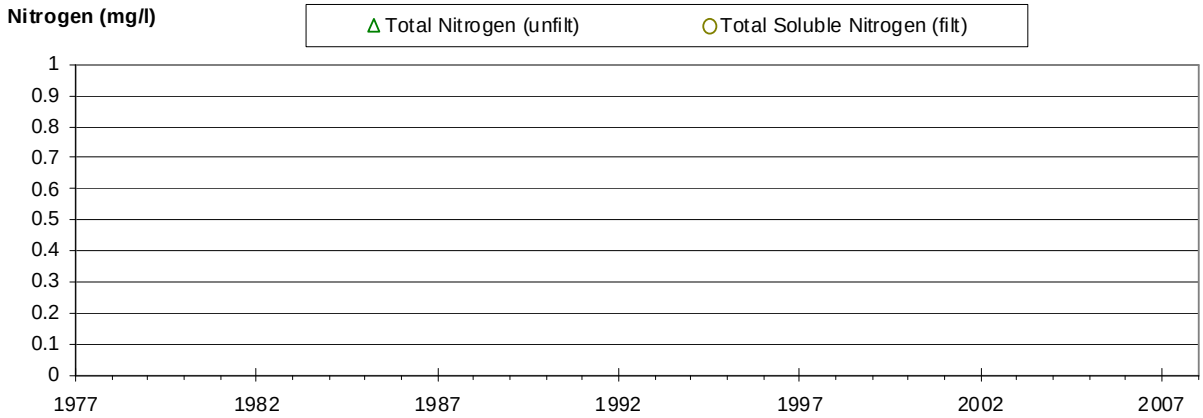


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

CRONIN

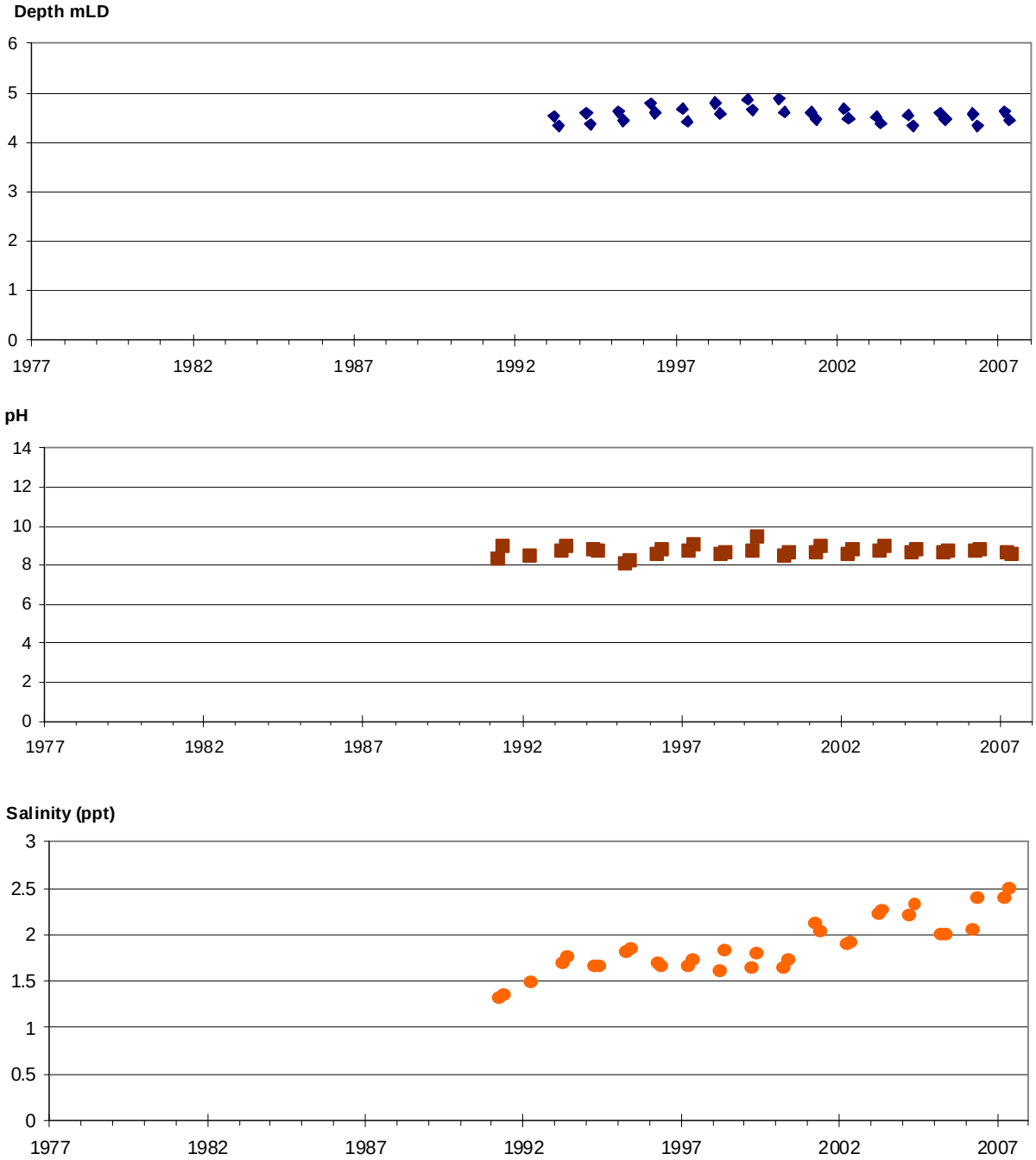




Lake Cronin is listed in the 'Directory of Important Wetlands in Australia'.

Cronin is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

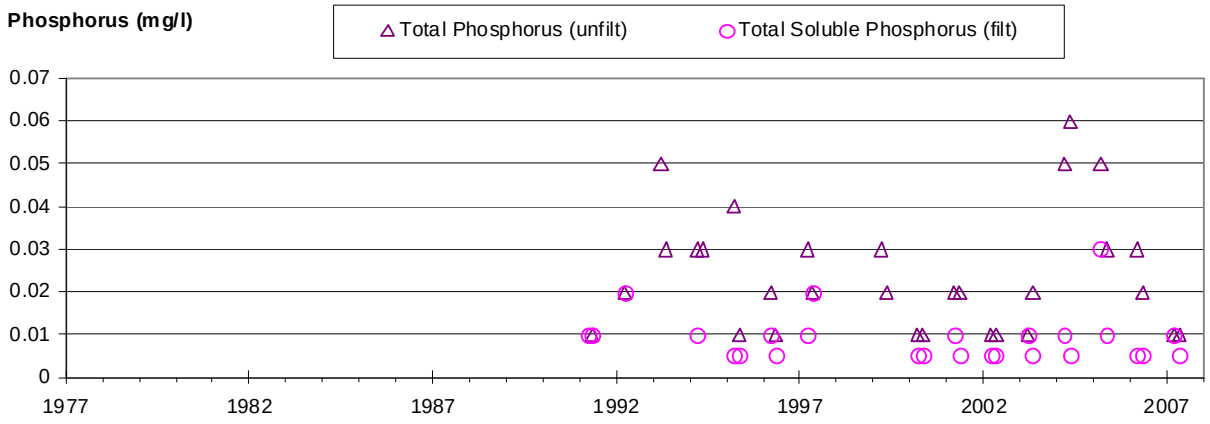
DAVIES (C)

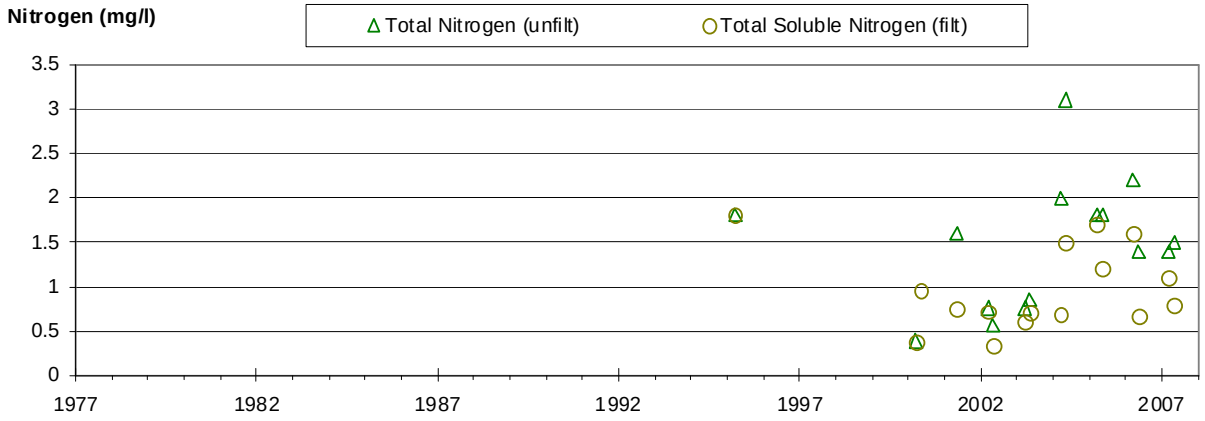


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

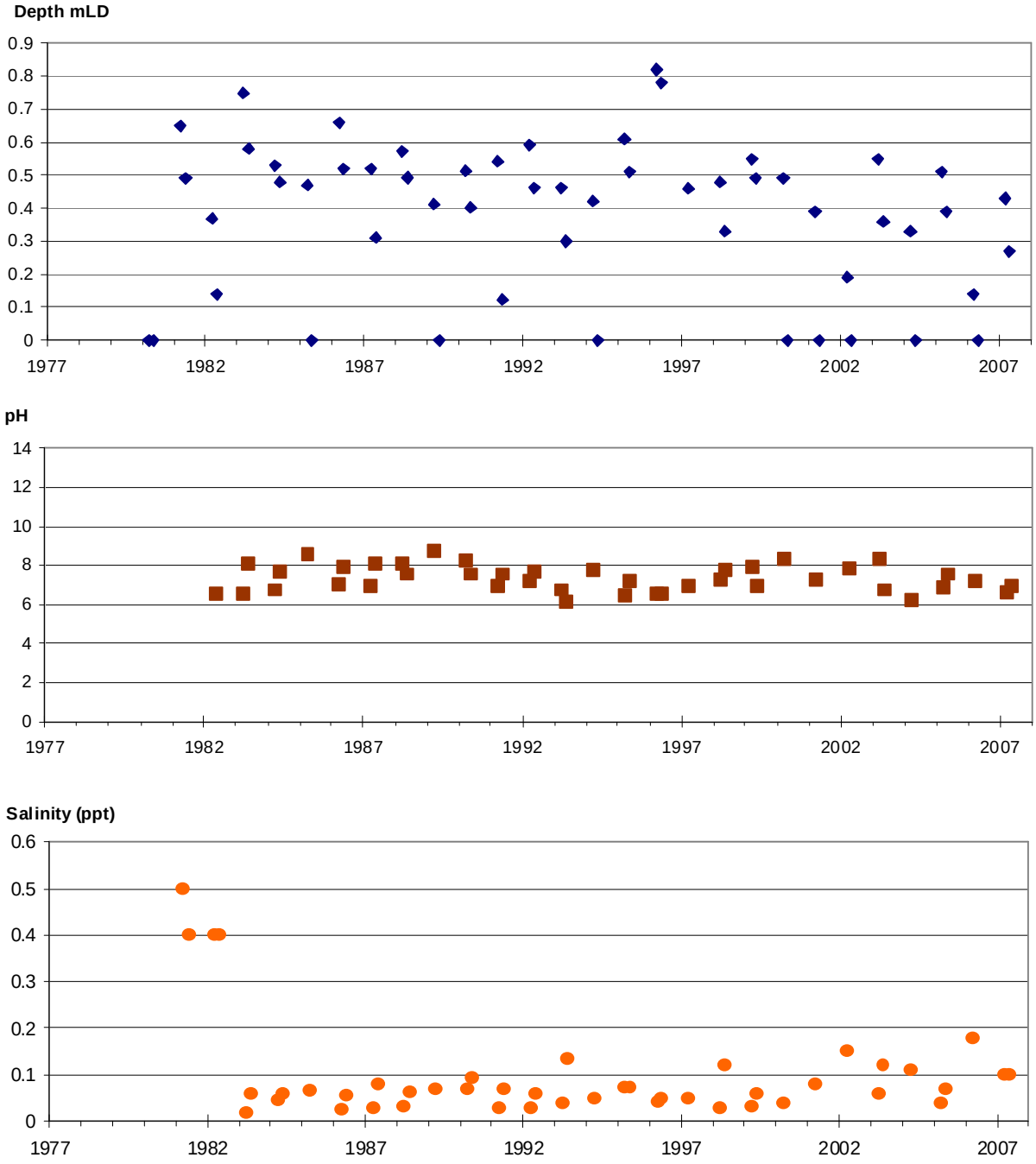
DAVIES





Davies is in the Blackwood District (headquartered in Busselton) of the South West DEC Region.

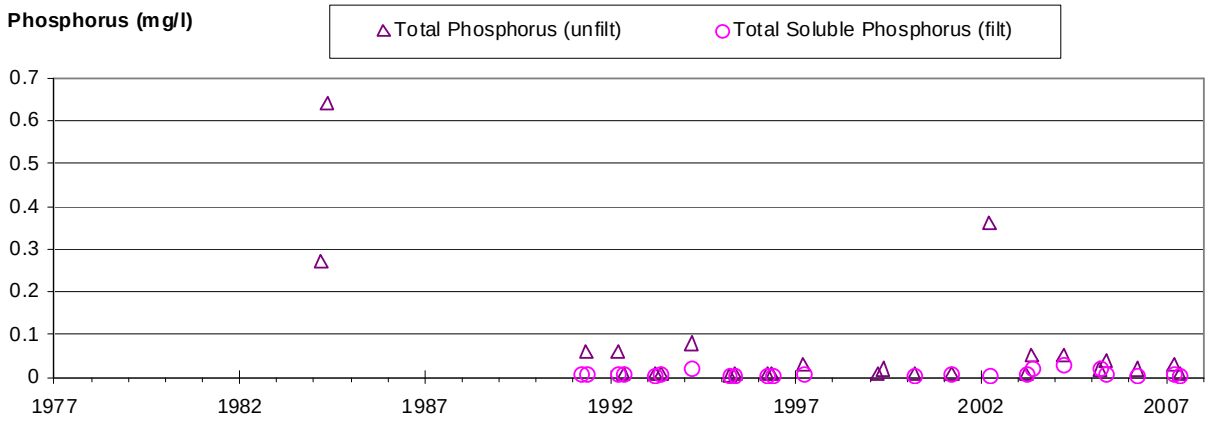
DOBADERRY (C)

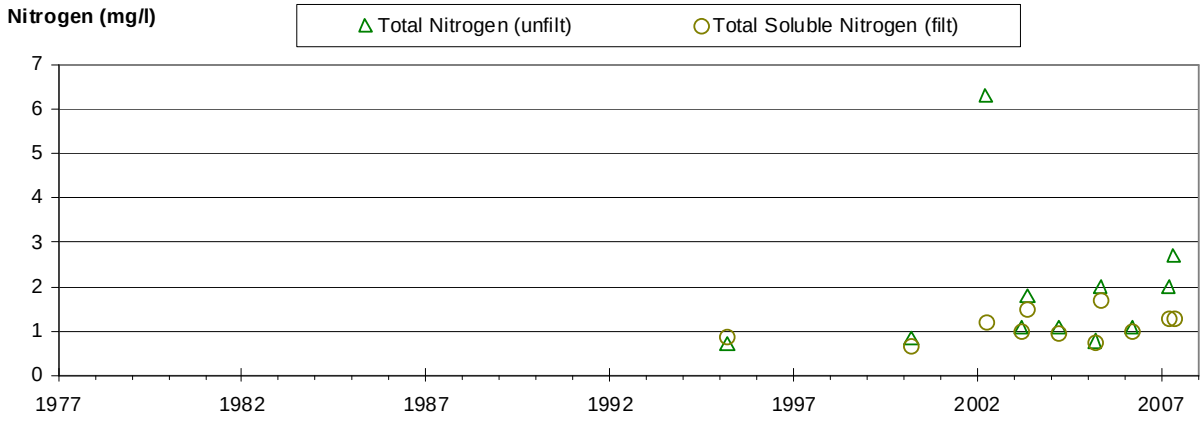


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

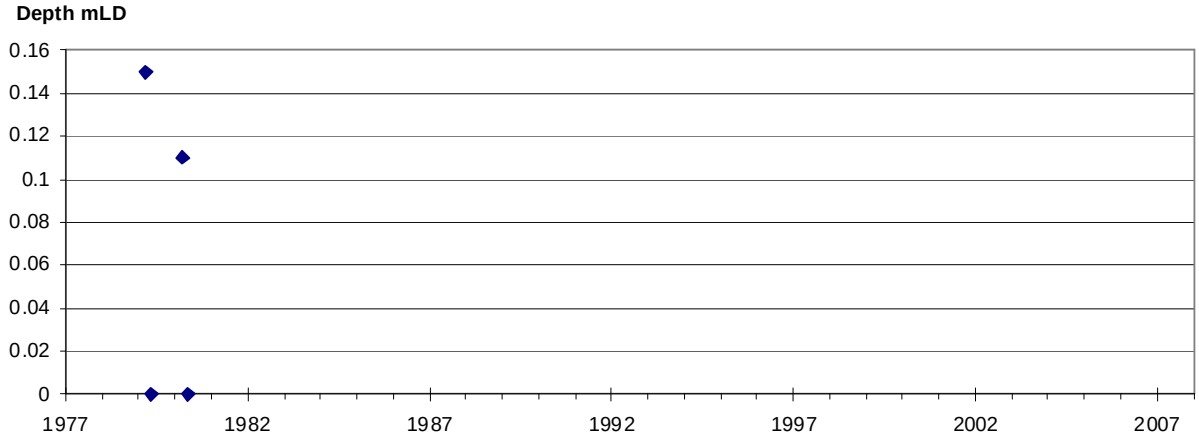
DOBADERRY

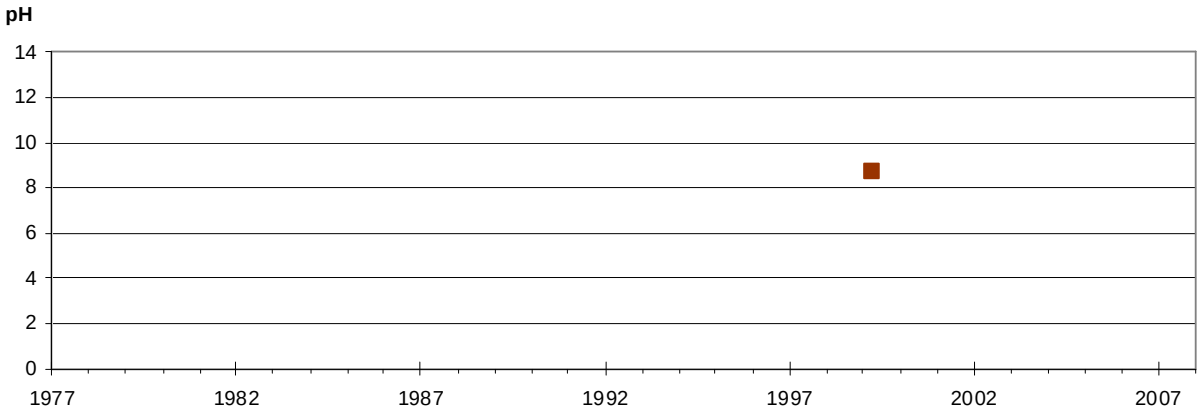


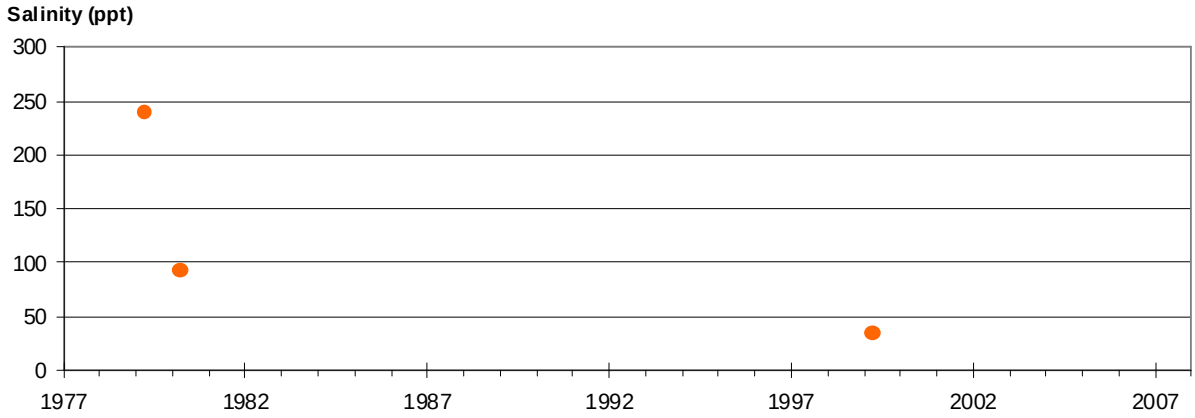


Dobaderry is in the Perth Hills District (headquartered in Mundaring) of the Swan DEC Region.

DOWERIN (H)

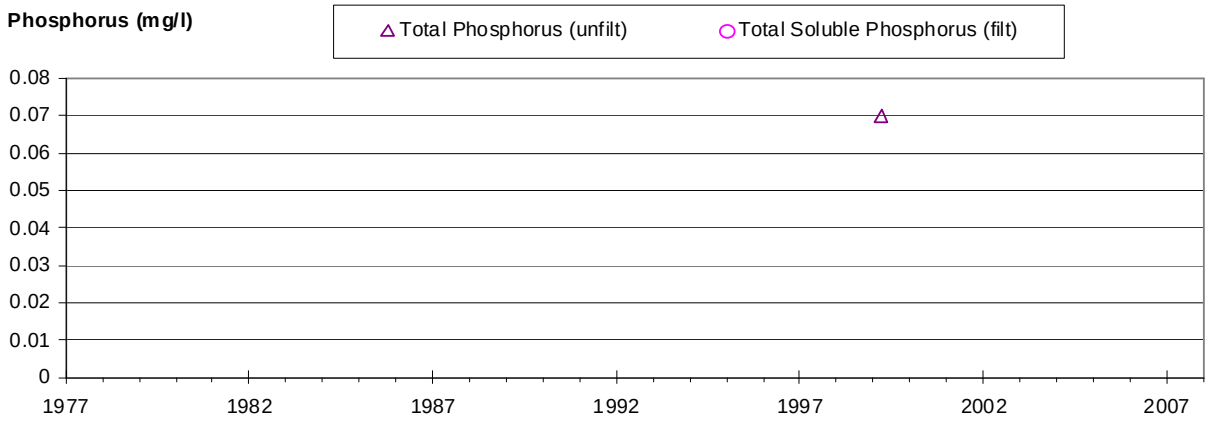


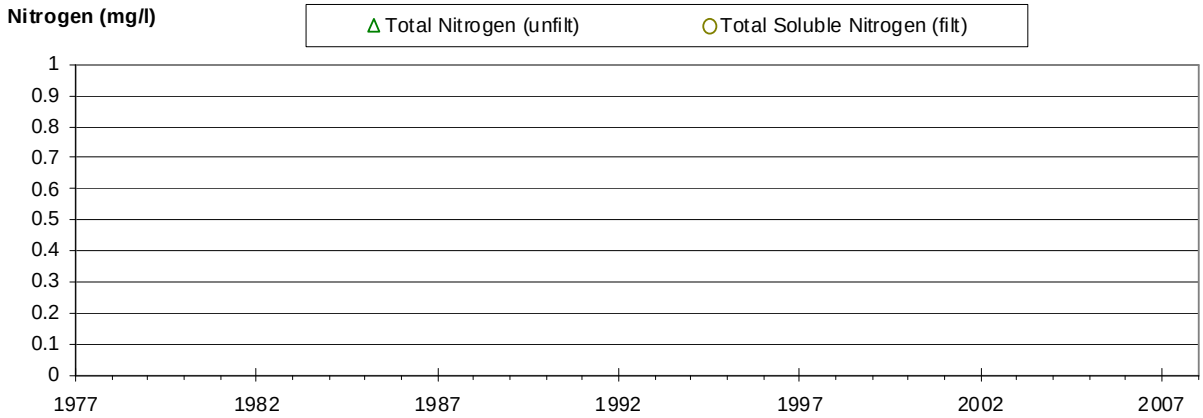




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

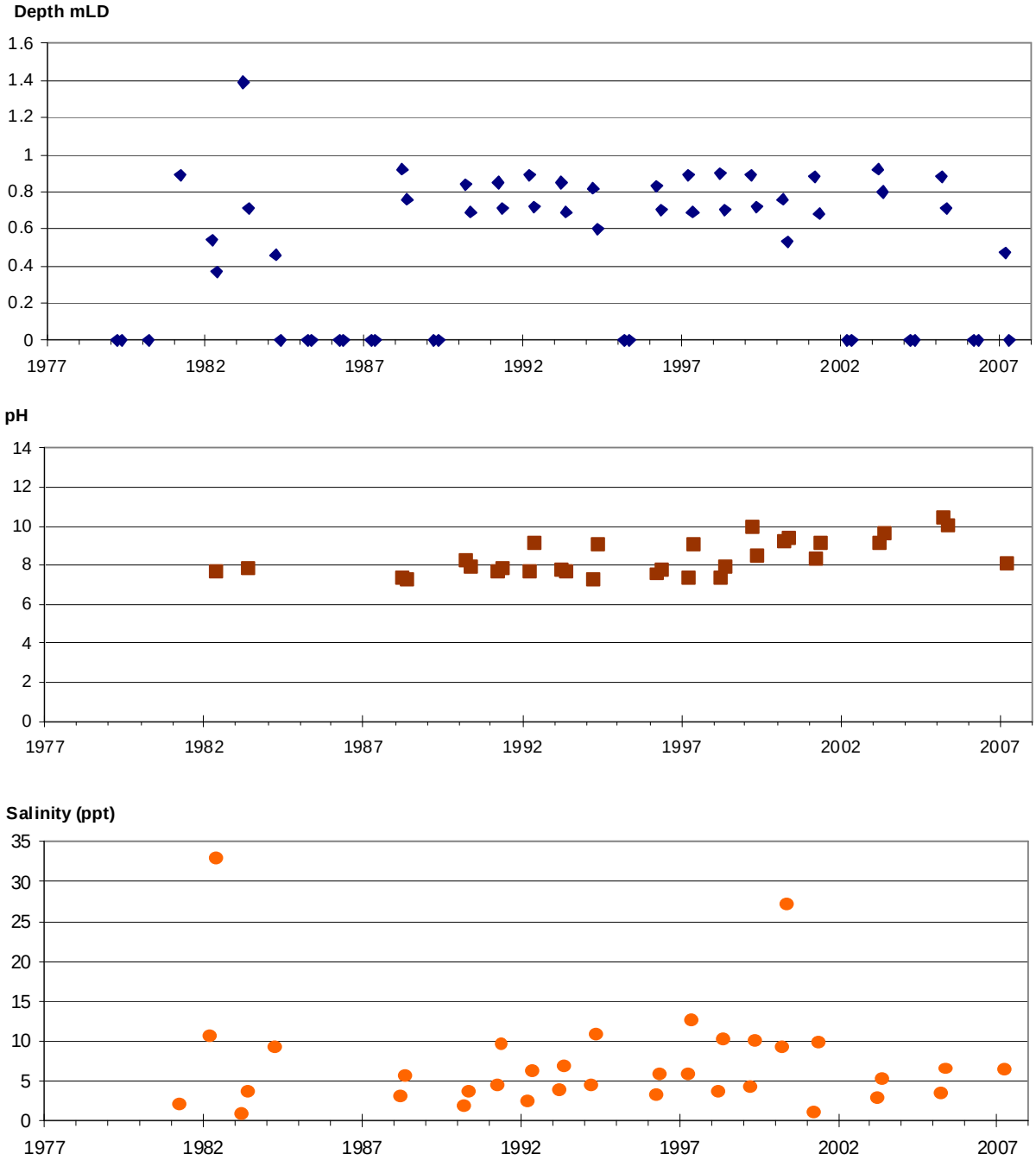
DOWERIN





Dowerin is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

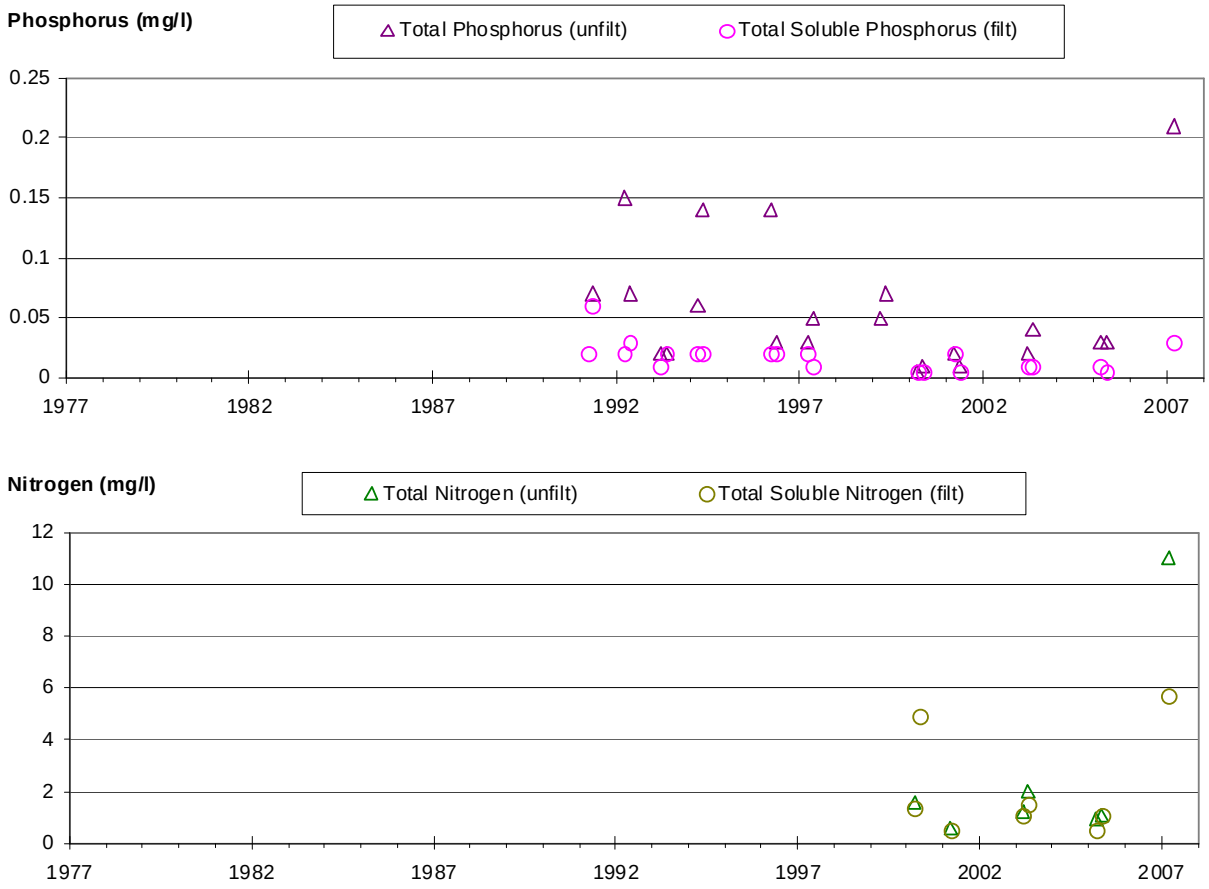
DULBINNING (C)



Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

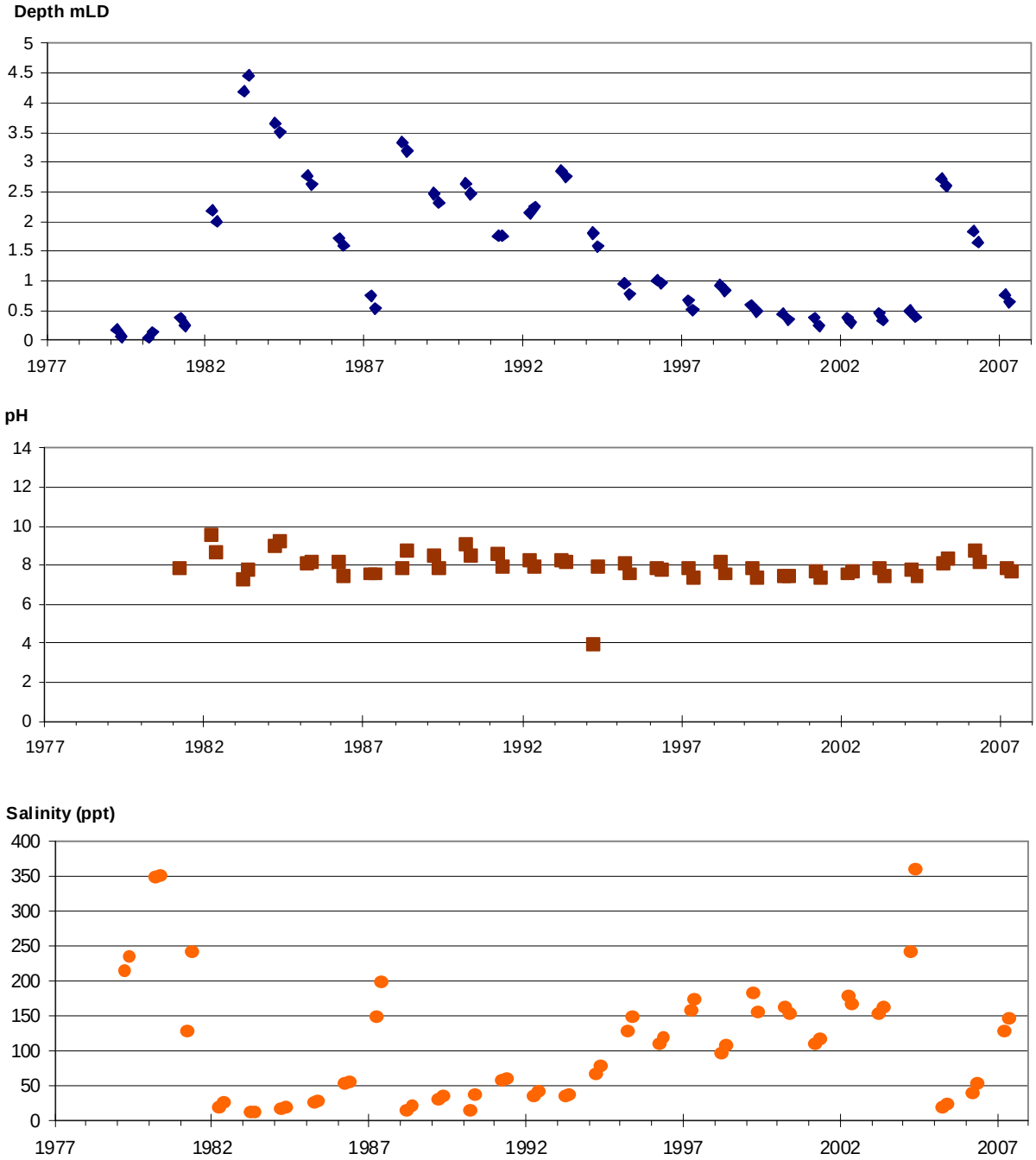
DULBINNING



Dulbinning is within the Toolibin Lake Natural Diversity Recovery Catchment.

Dulbinning is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

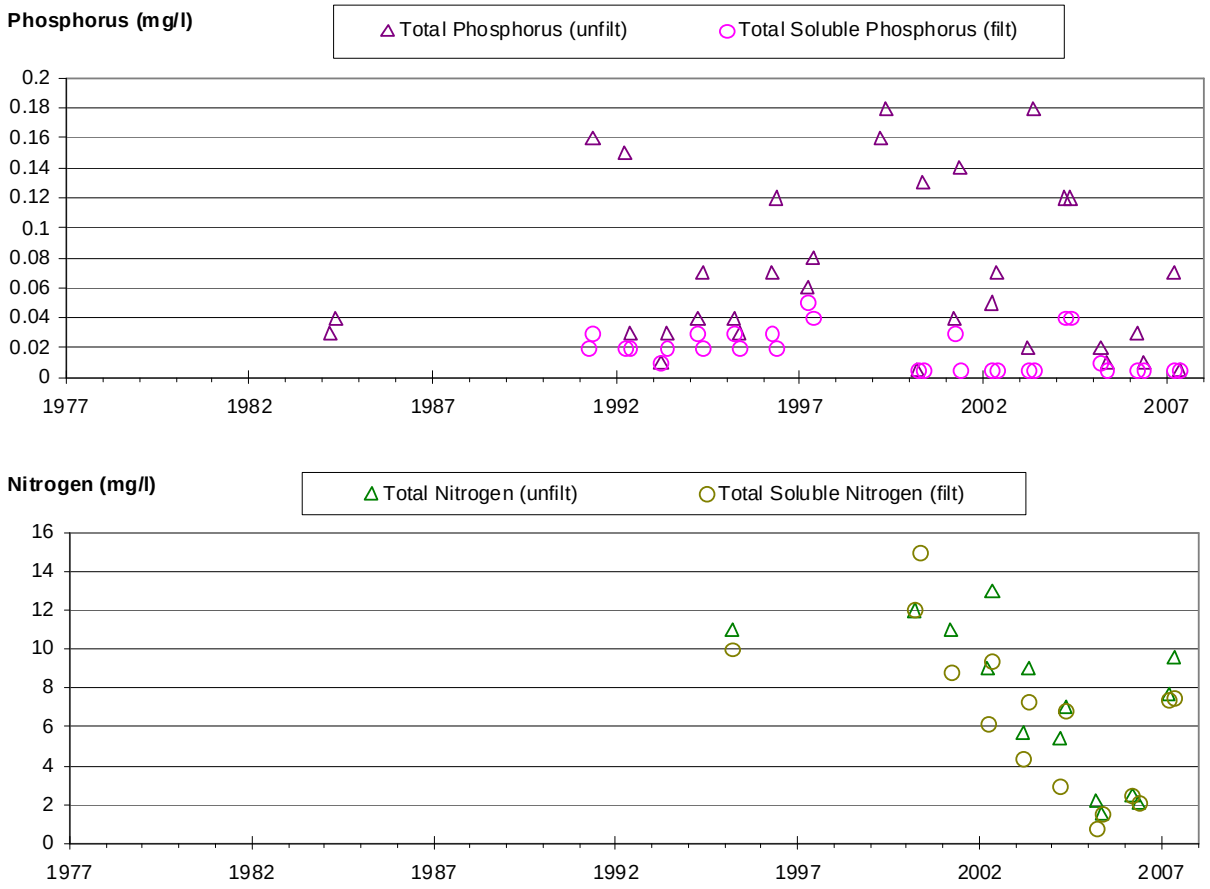
DUMBLEYUNG (C, IM)



Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

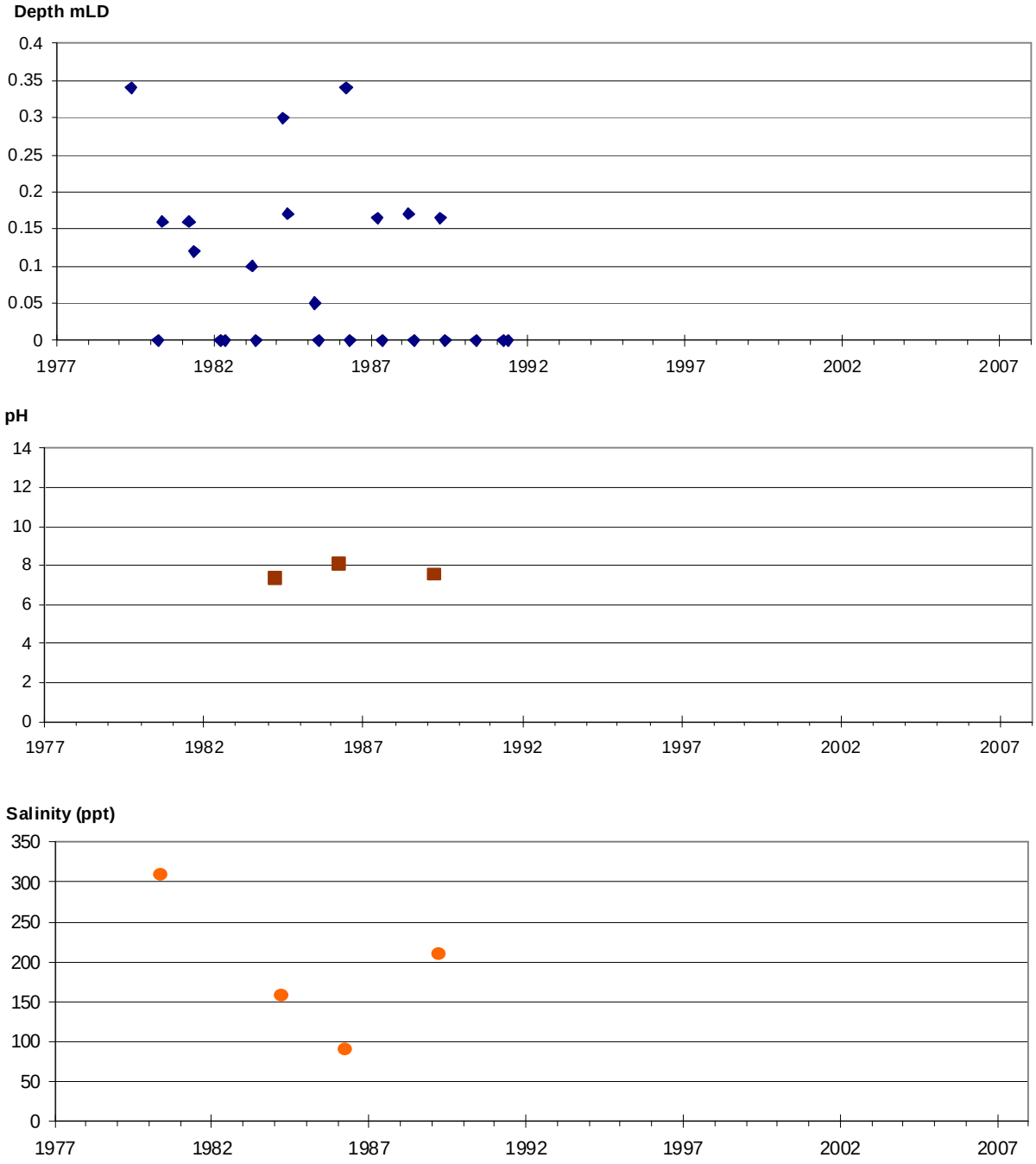
DUMBLEYUNG



Dumbleyung Lake is listed in the 'Directory of Important Wetlands in Australia'.

Dumbleyung is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

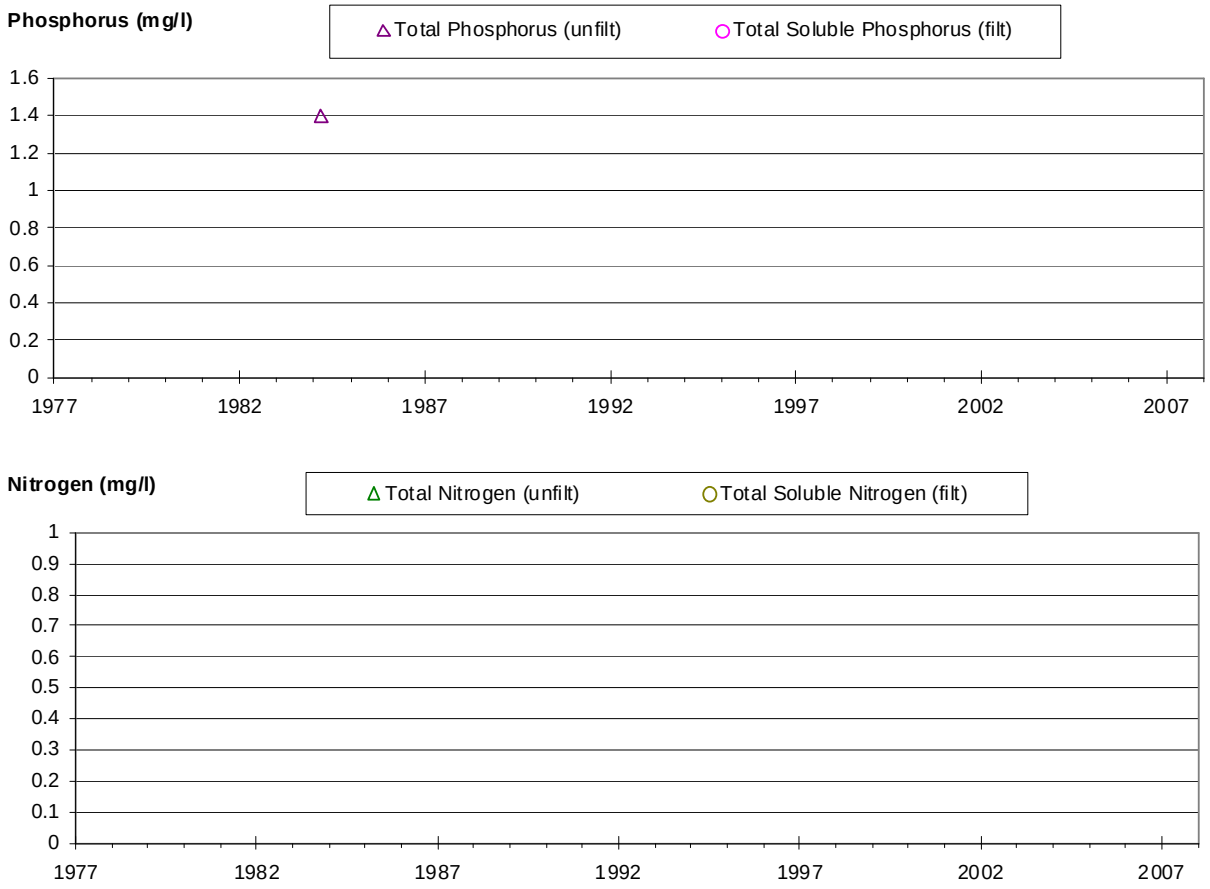
DUNDAS 33113 (H)



Notes:

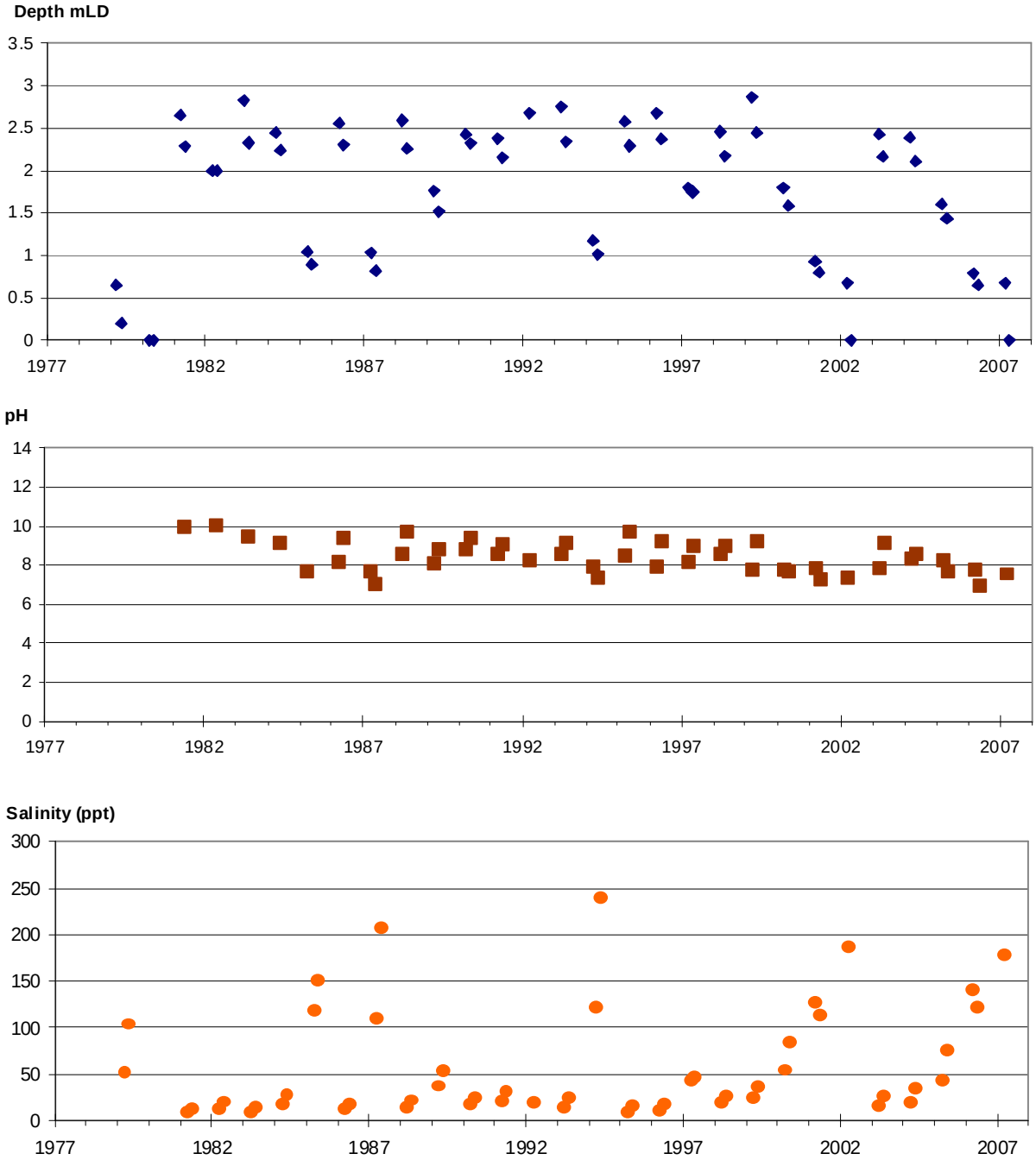
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

DUNDAS 33113



Dundas 33113 is in the Esperance District of the South Coast DEC Region.

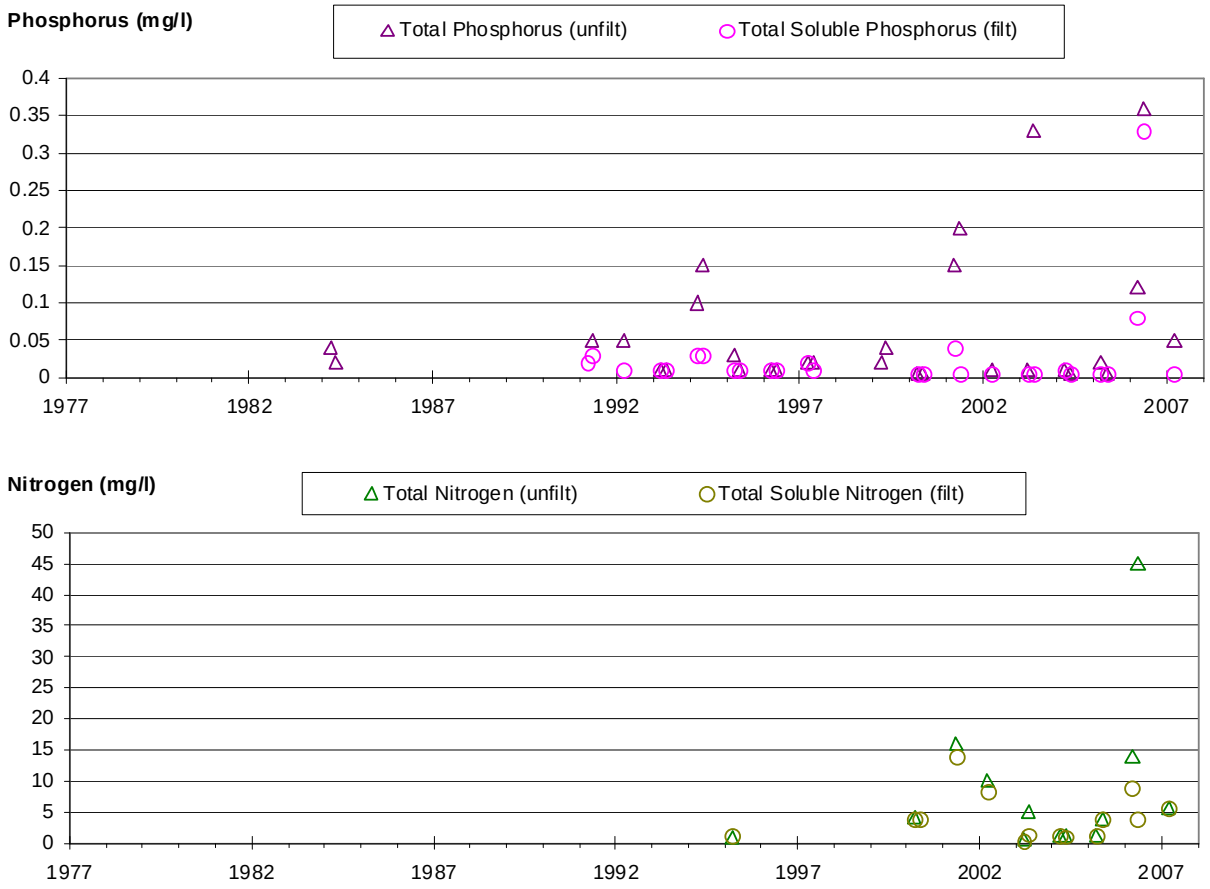
EGANU (C, IM)



Notes:

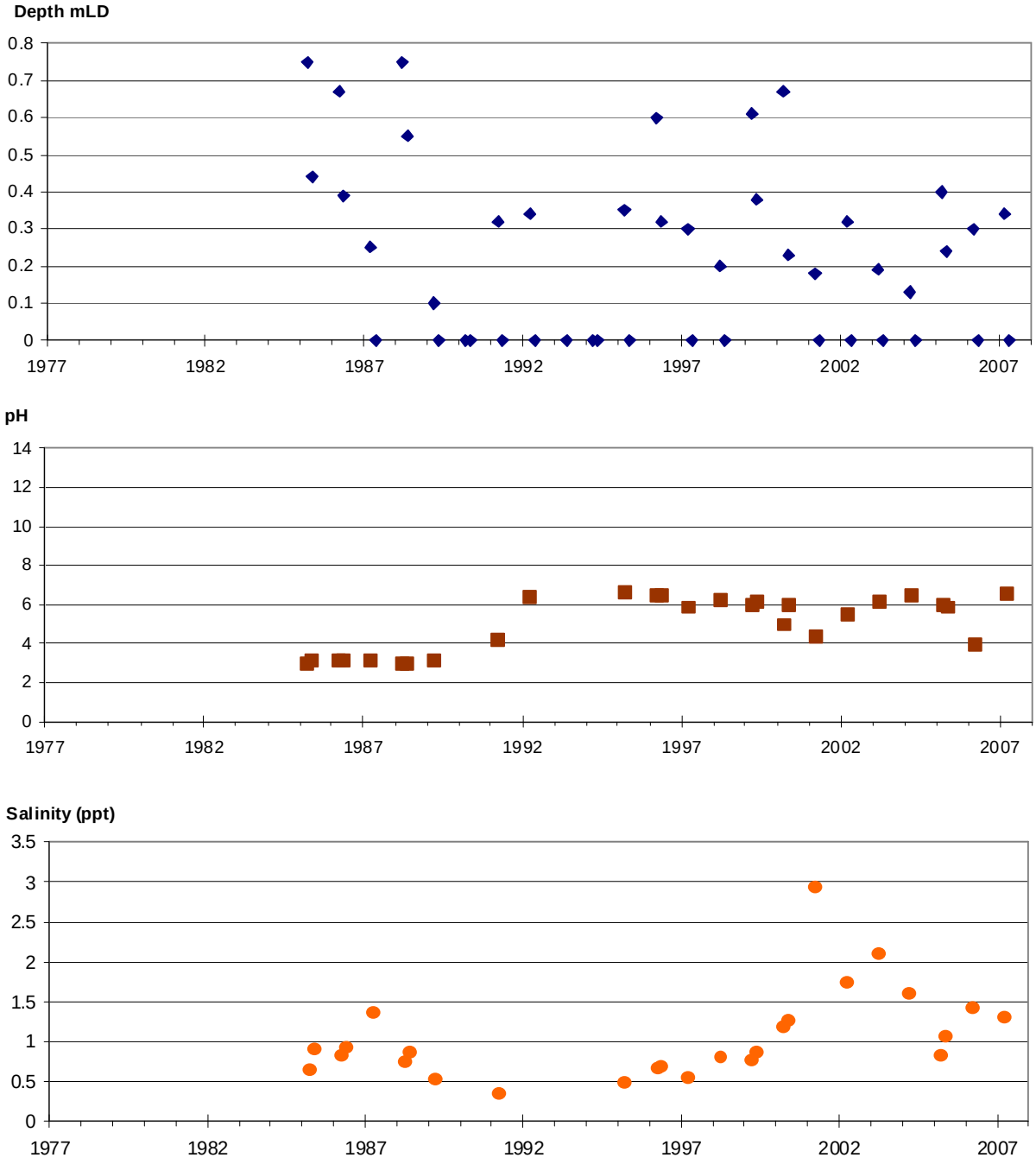
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

EGANU



Eganu is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

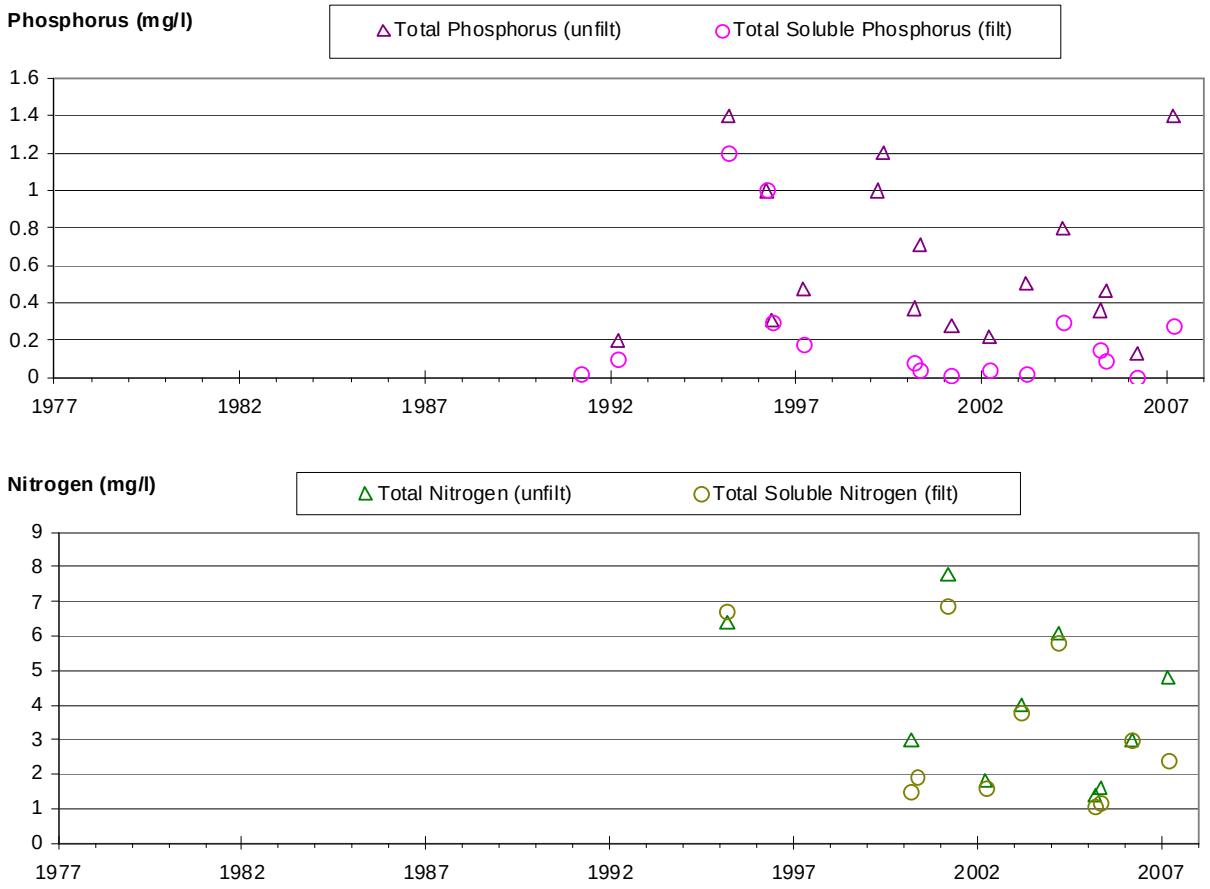
EGRET (C)



Notes:

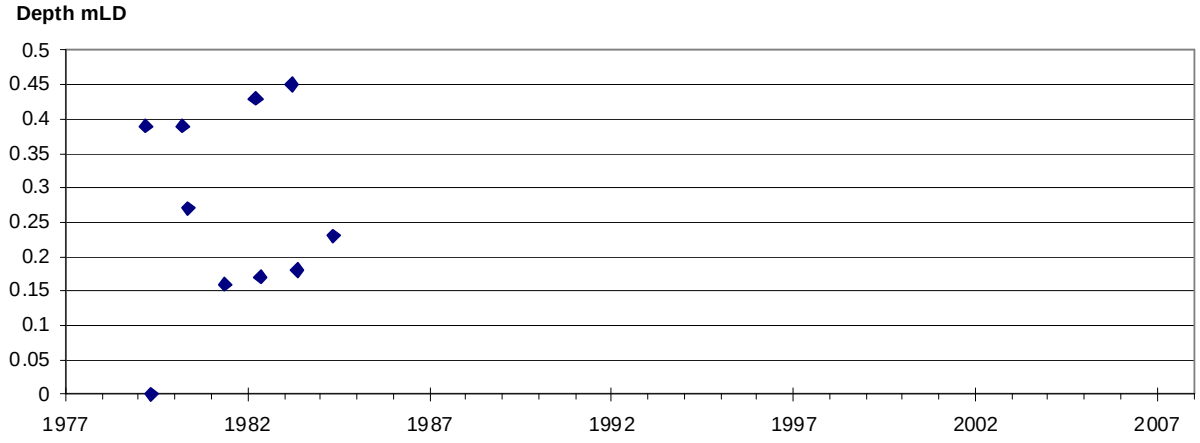
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

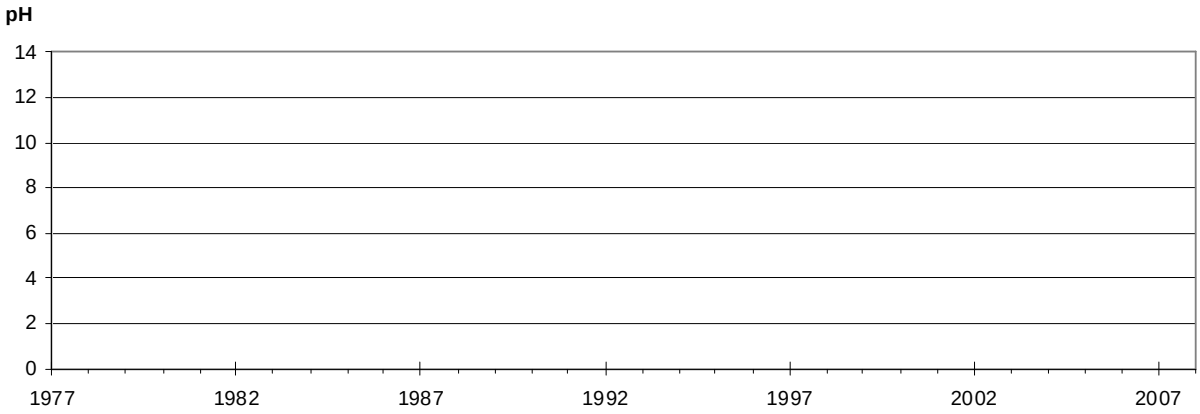
EGRET

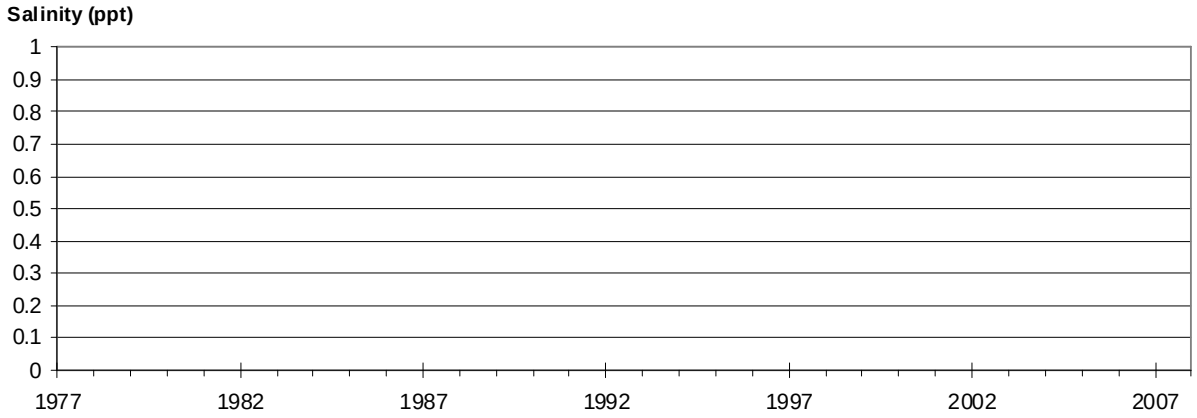


Egret is in the Wellington District (headquartered in Collie) of the South West DEC Region.

ELLEN BROOK (H)

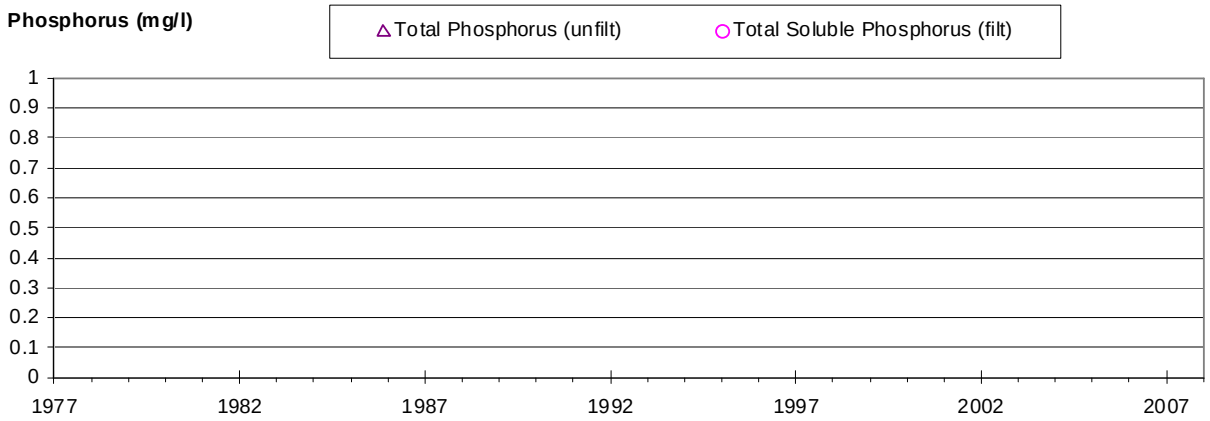


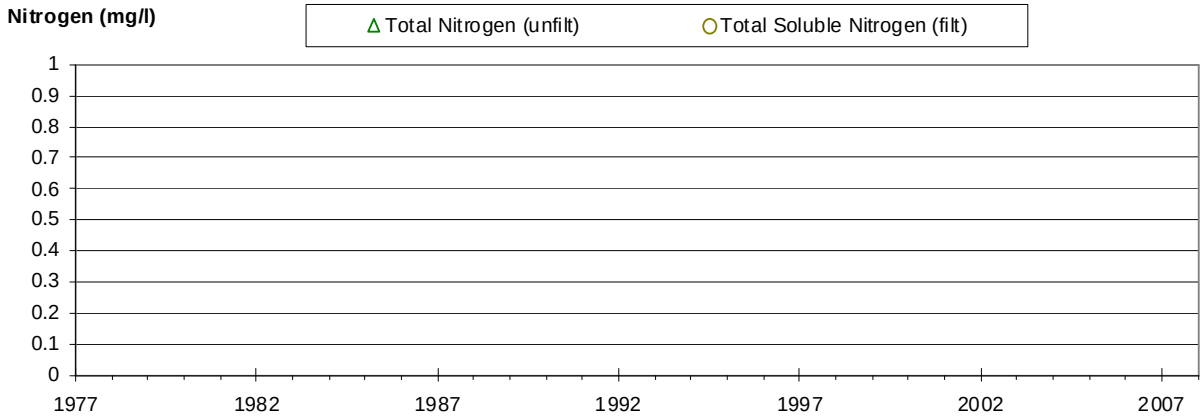




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

ELLEN BROOK

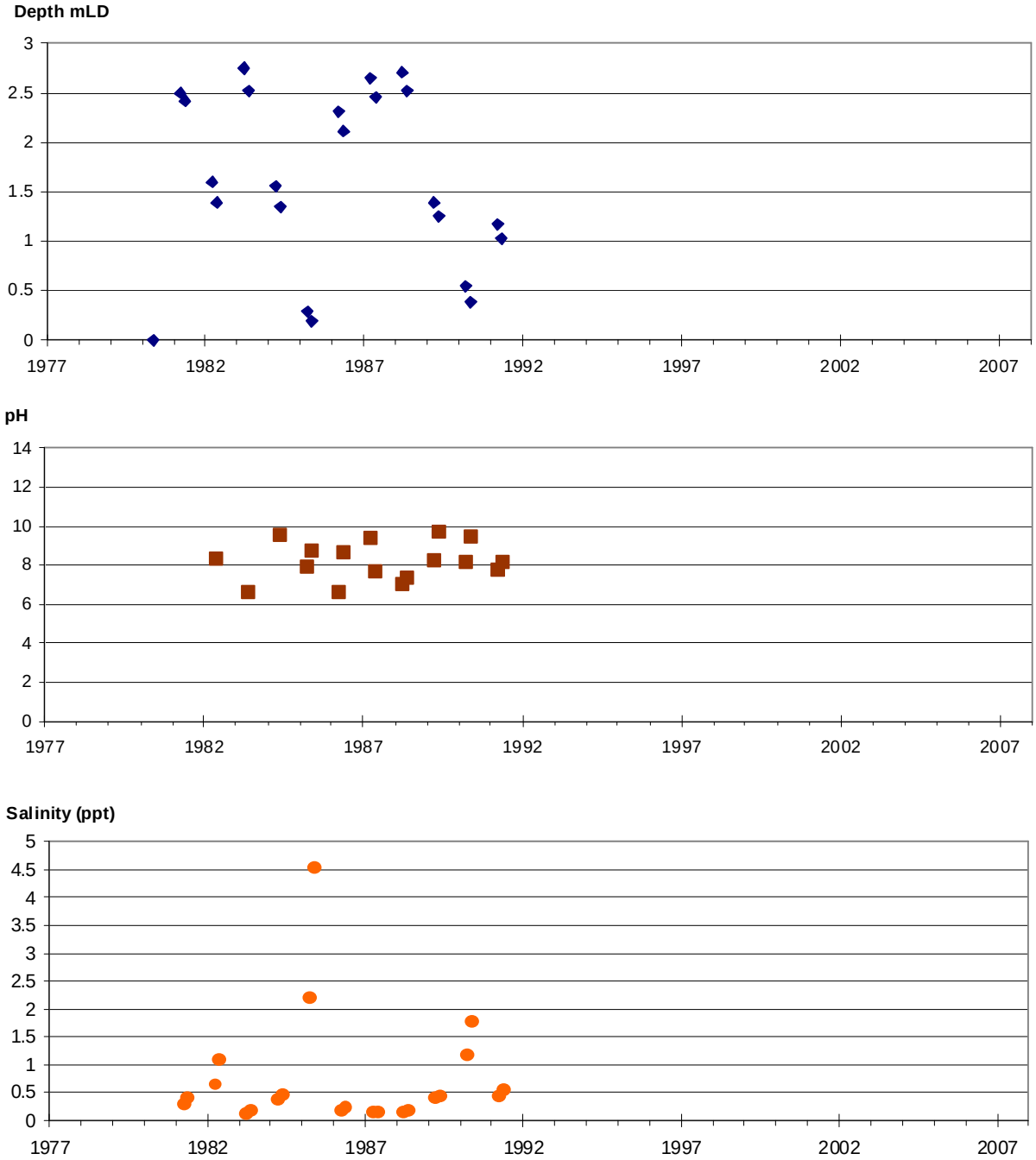




Ellen Brook is a component of the 'Ellen Brook Swamps System', which is listed in the 'Directory of Important Wetlands in Australia'.

Ellen Brook is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

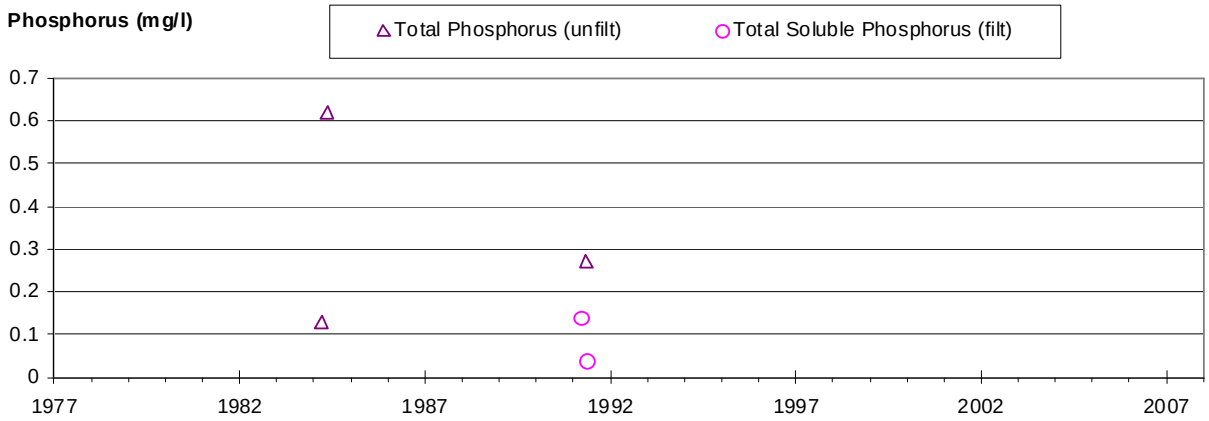
ENEMINGA (H)

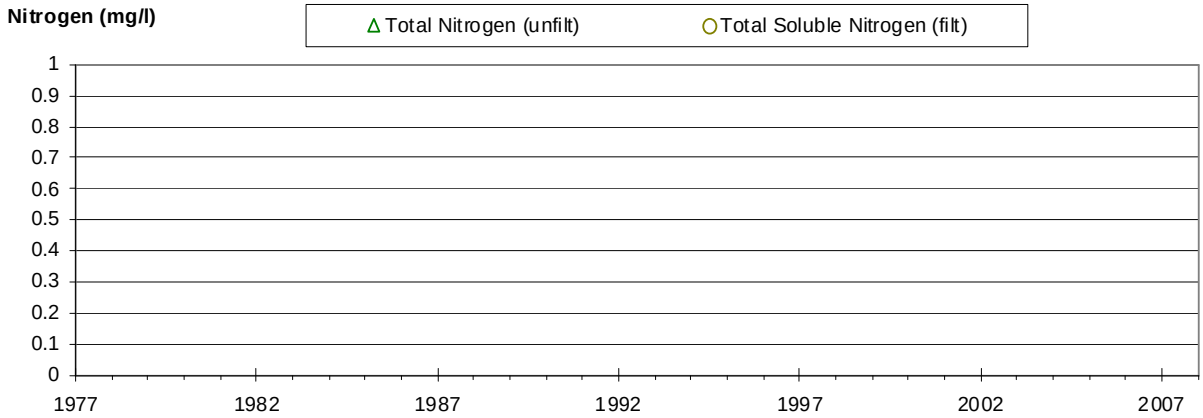


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

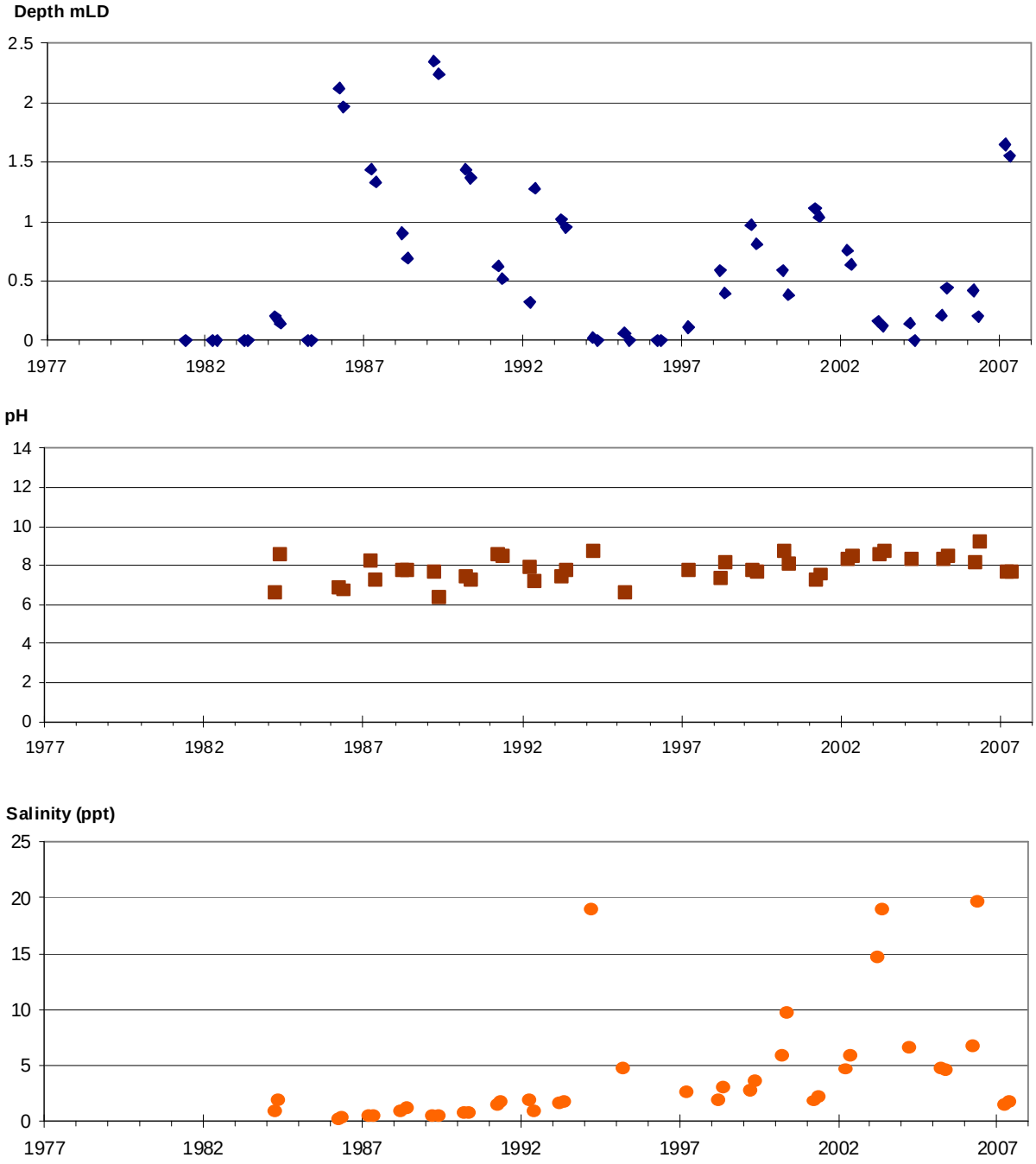
ENEMINGA





Eneminga is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

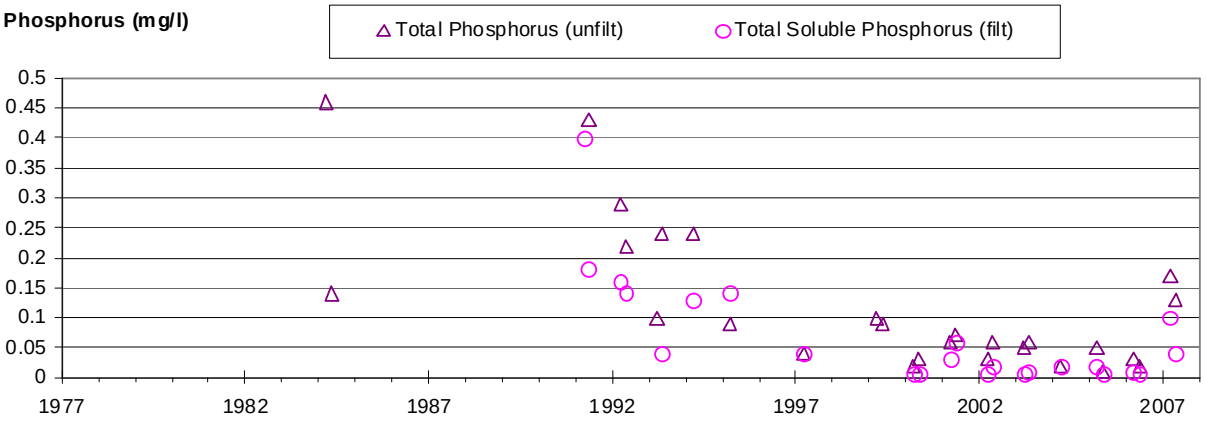
ESPERANCE 26410 (C)

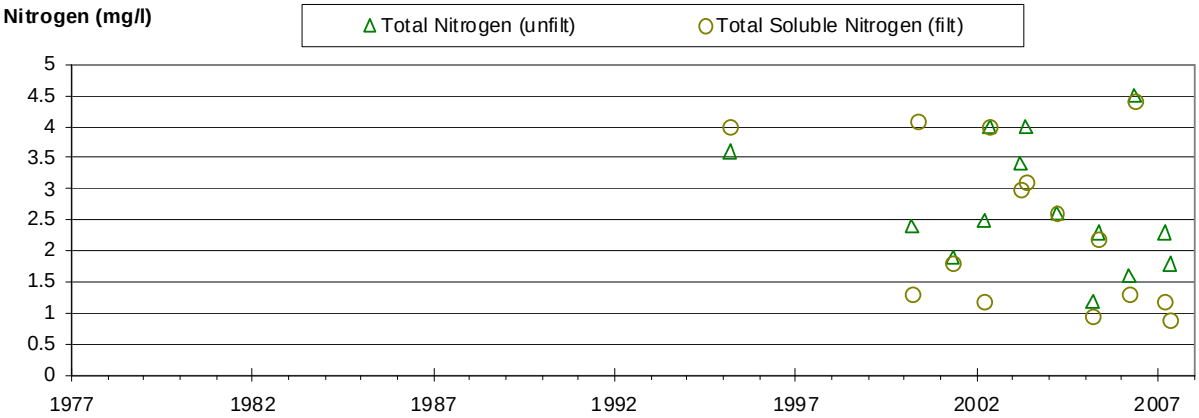


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

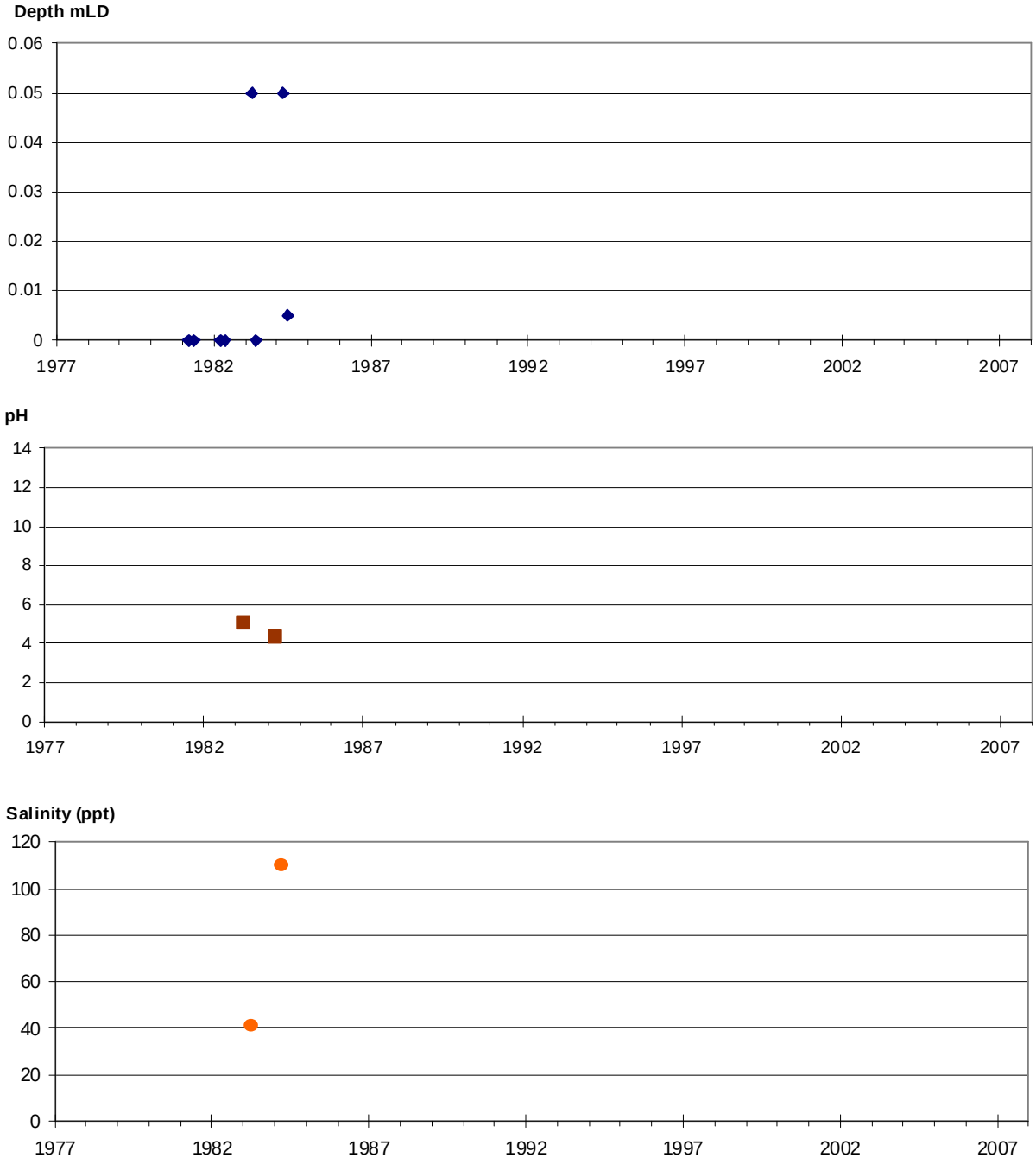
ESPERANCE 26410





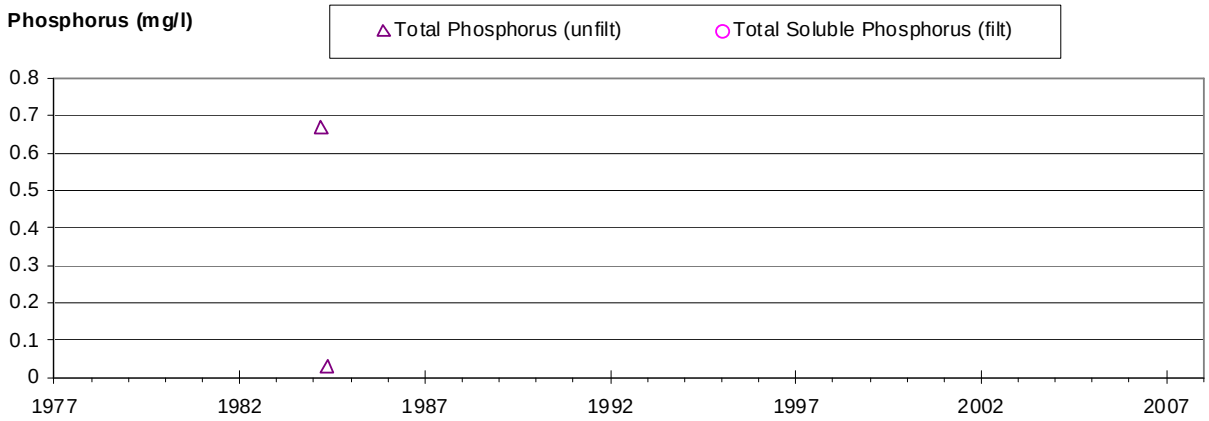
Esperance 26410 is in the Esperance District of the South Coast DEC Region.

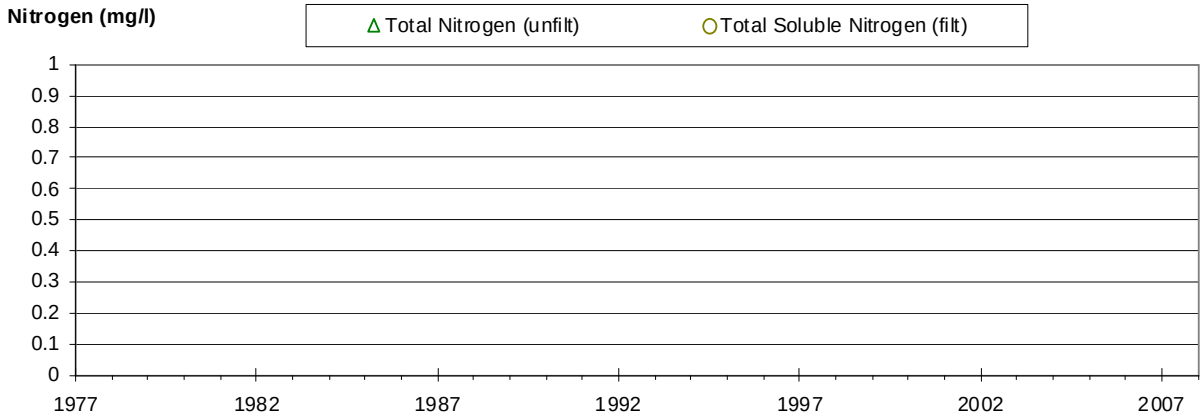
ESPERANCE 27768 (H)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

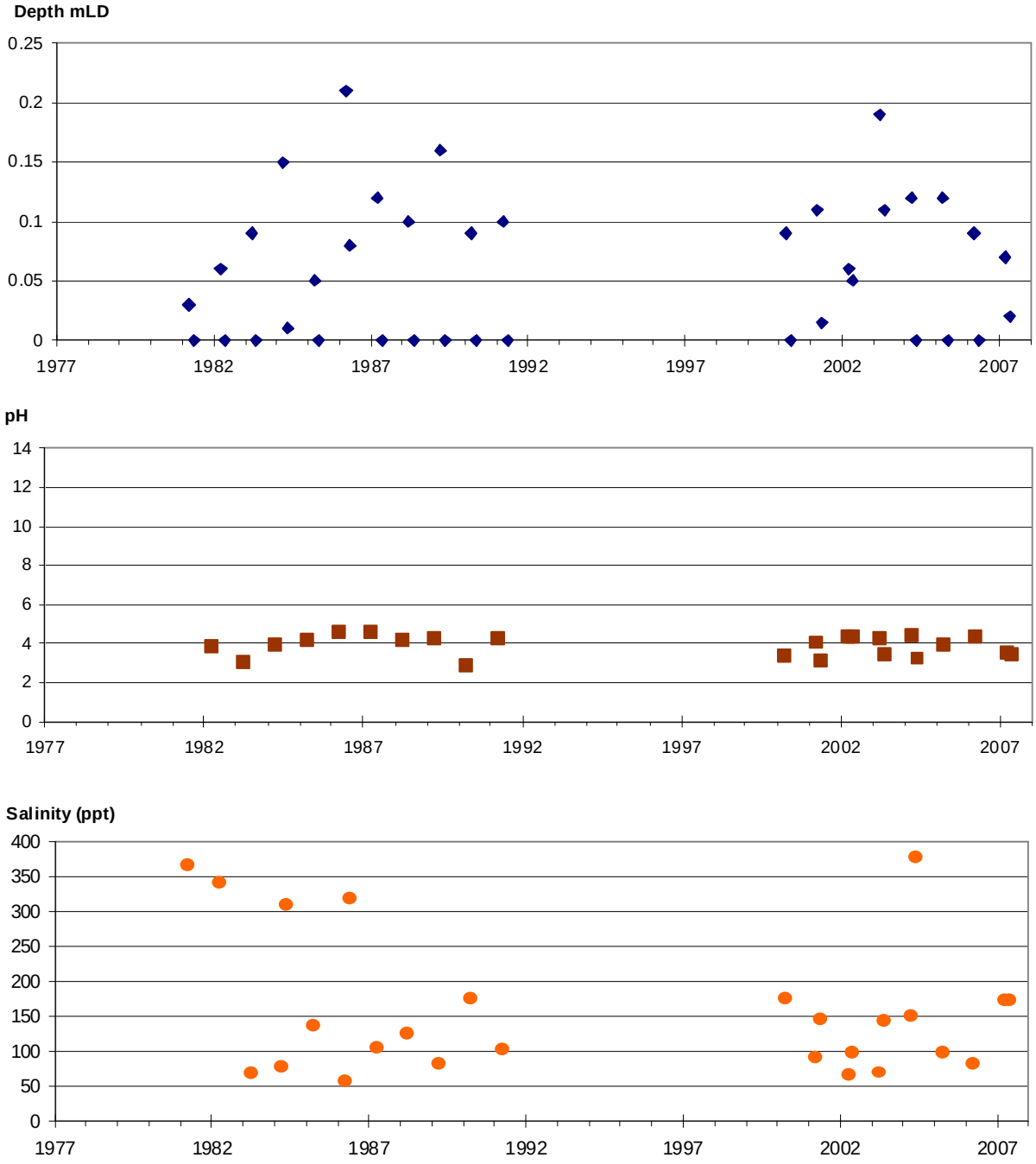
ESPERANCE 27768





Esperance 27768 is in the Esperance District of the South Coast DEC Region.

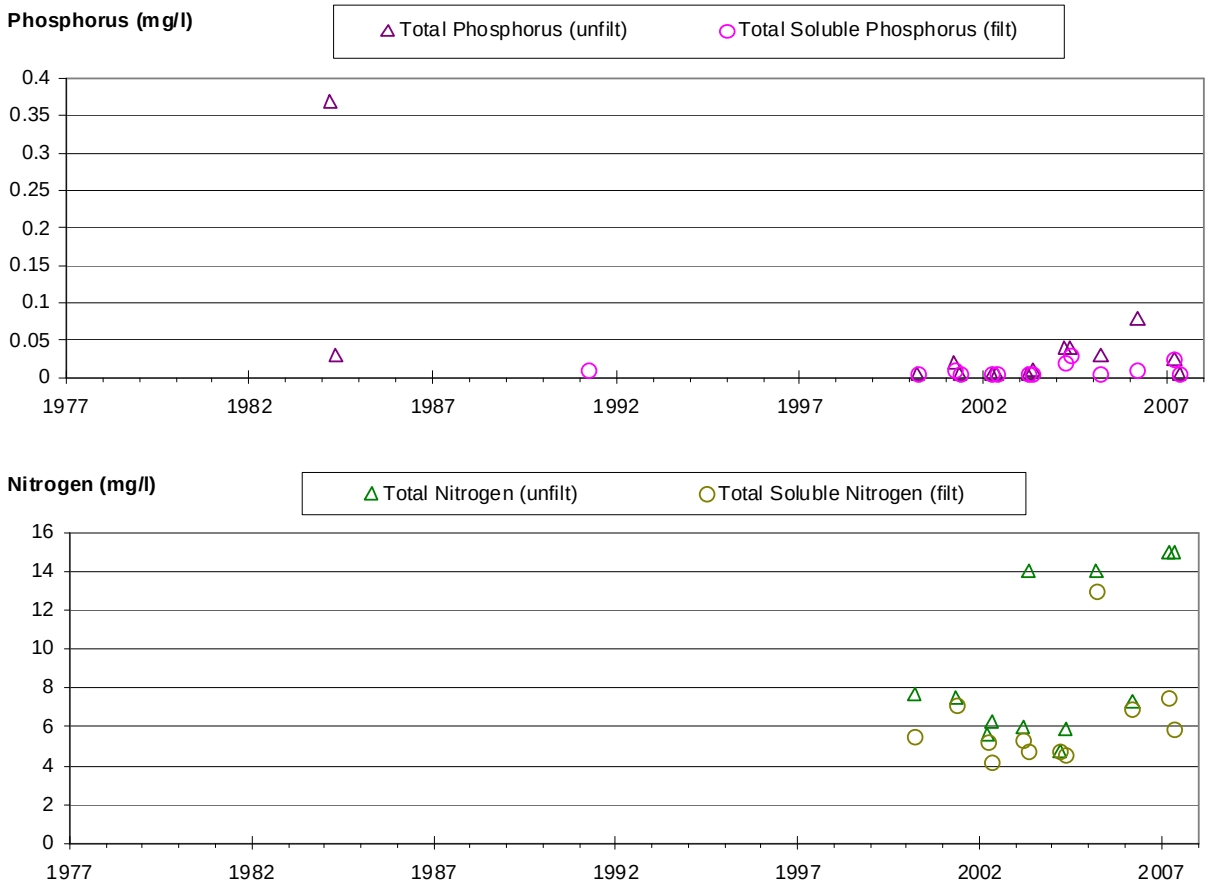
ESPERANCE 27985 (C)



Notes:

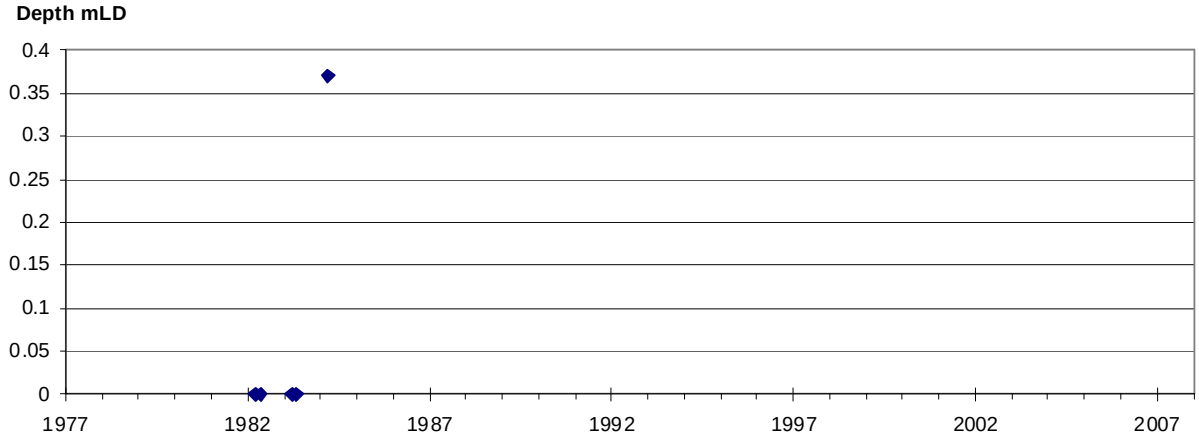
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

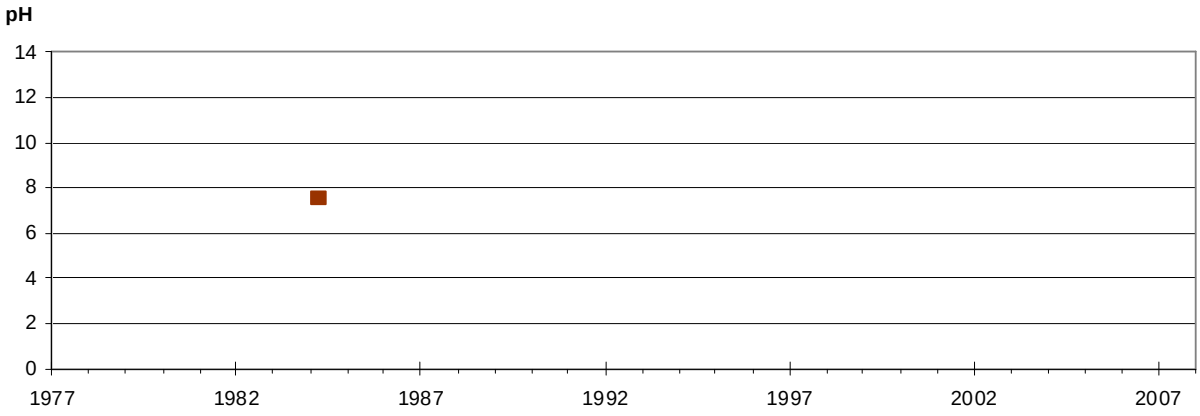
ESPERANCE 27985

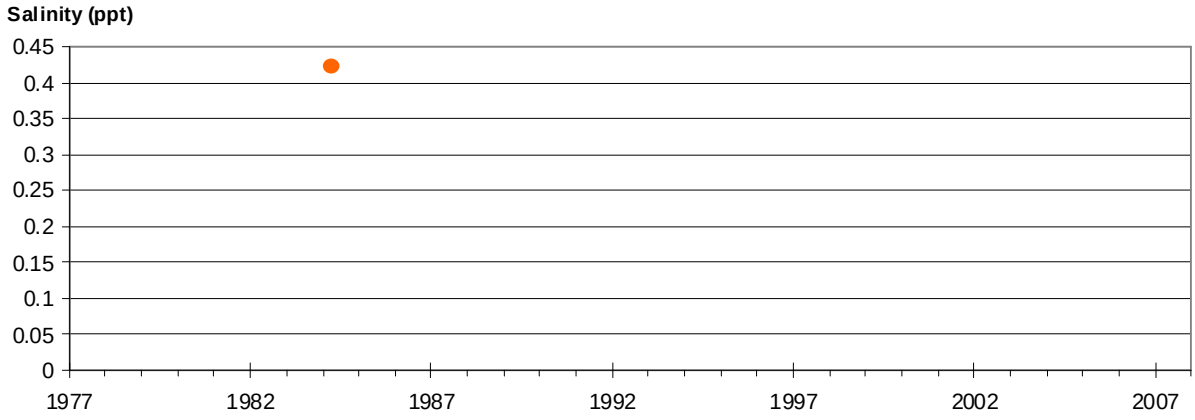


Esperance 27985 is in the Esperance District of the South Coast DEC Region.

ESPERANCE 32128 (H)

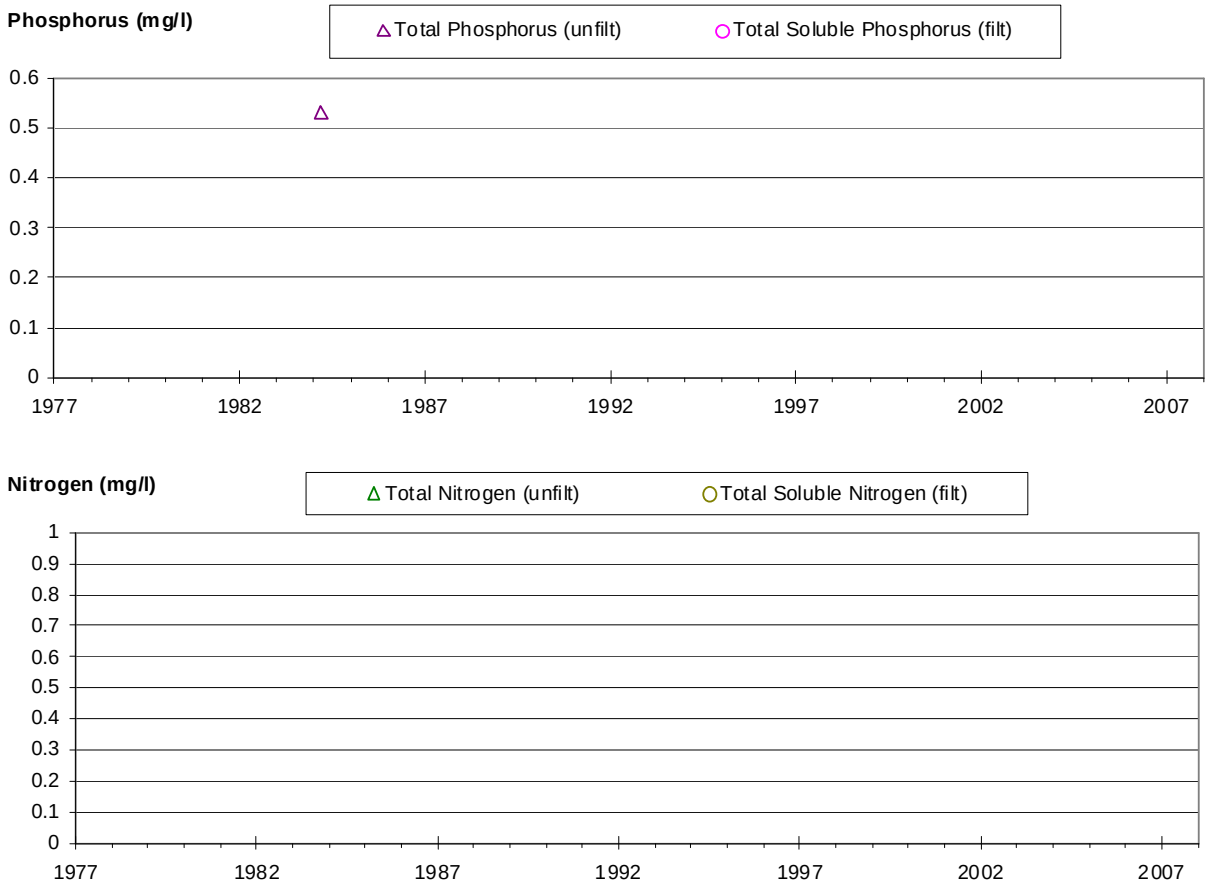






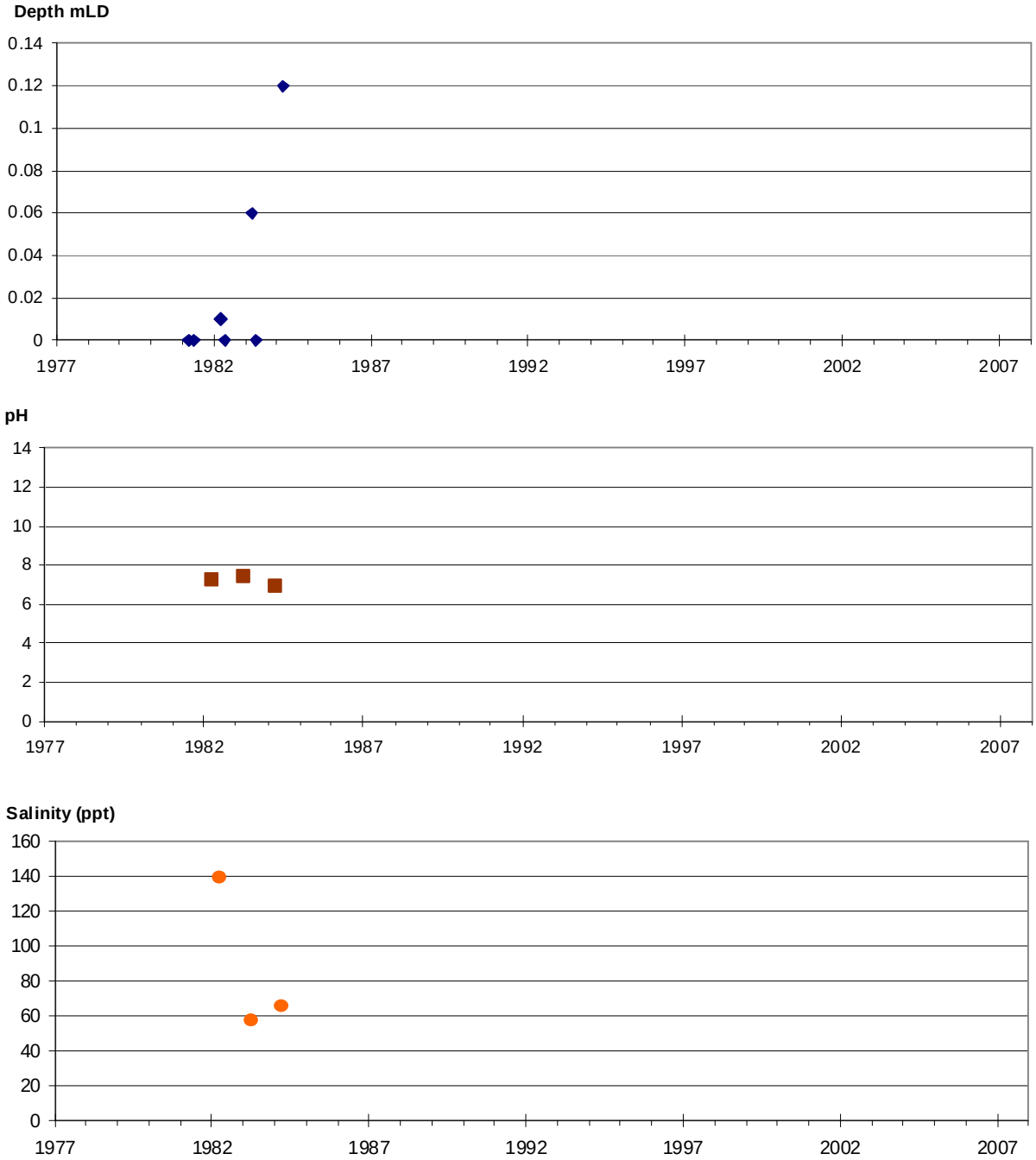
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

ESPERANCE 32128



Esperance 32128 is in the Esperance District of the South Coast DEC Region.

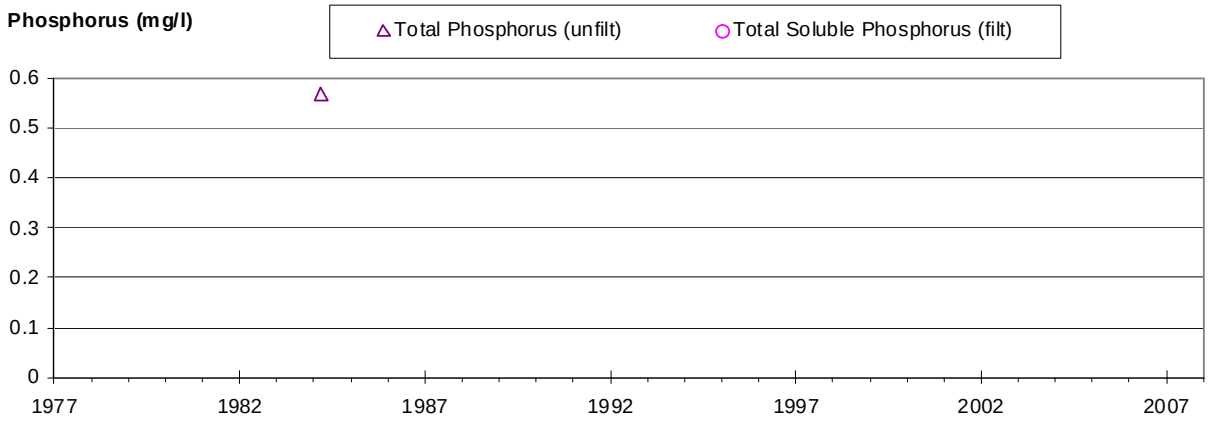
ESPERANCE 32776 (H)

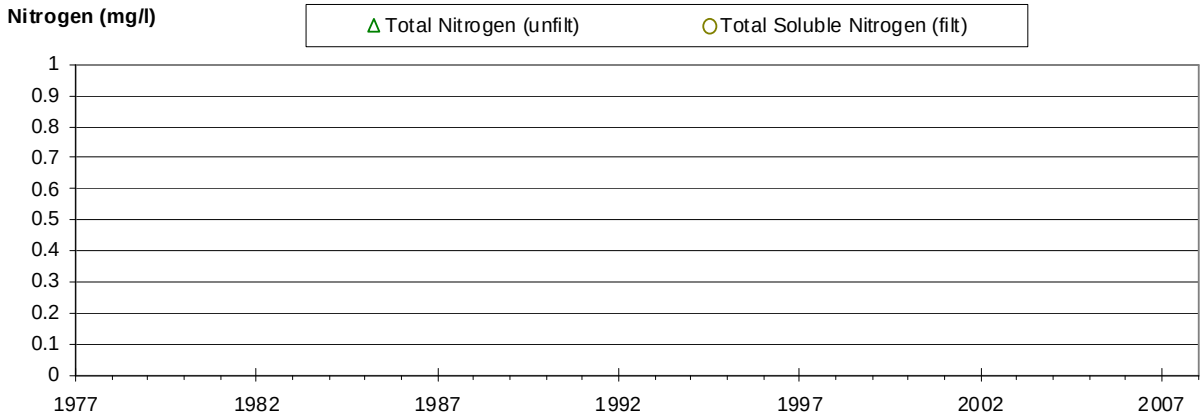


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

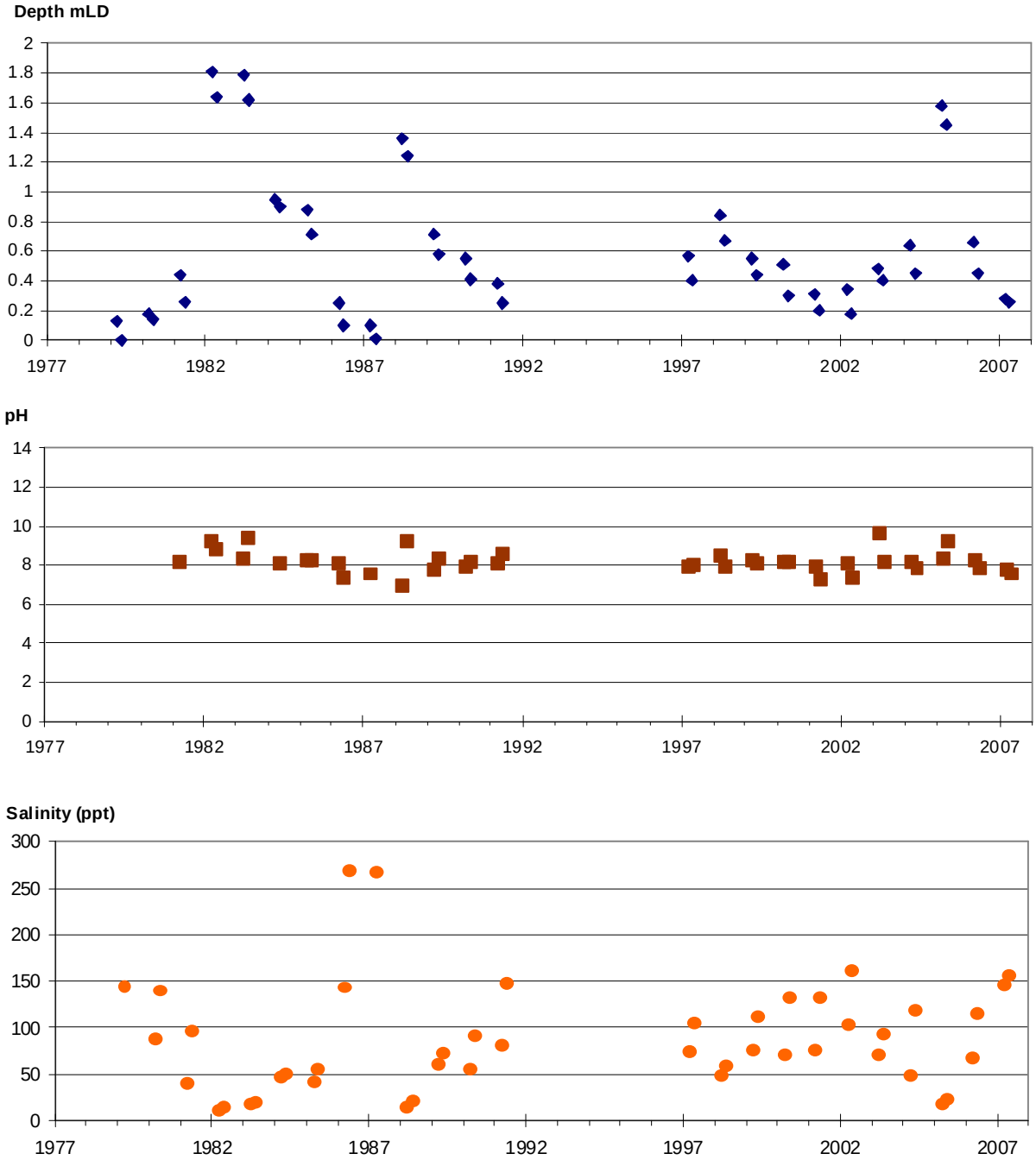
ESPERANCE 32776





Esperance 32776 is in the Esperance District of the South Coast DEC Region.

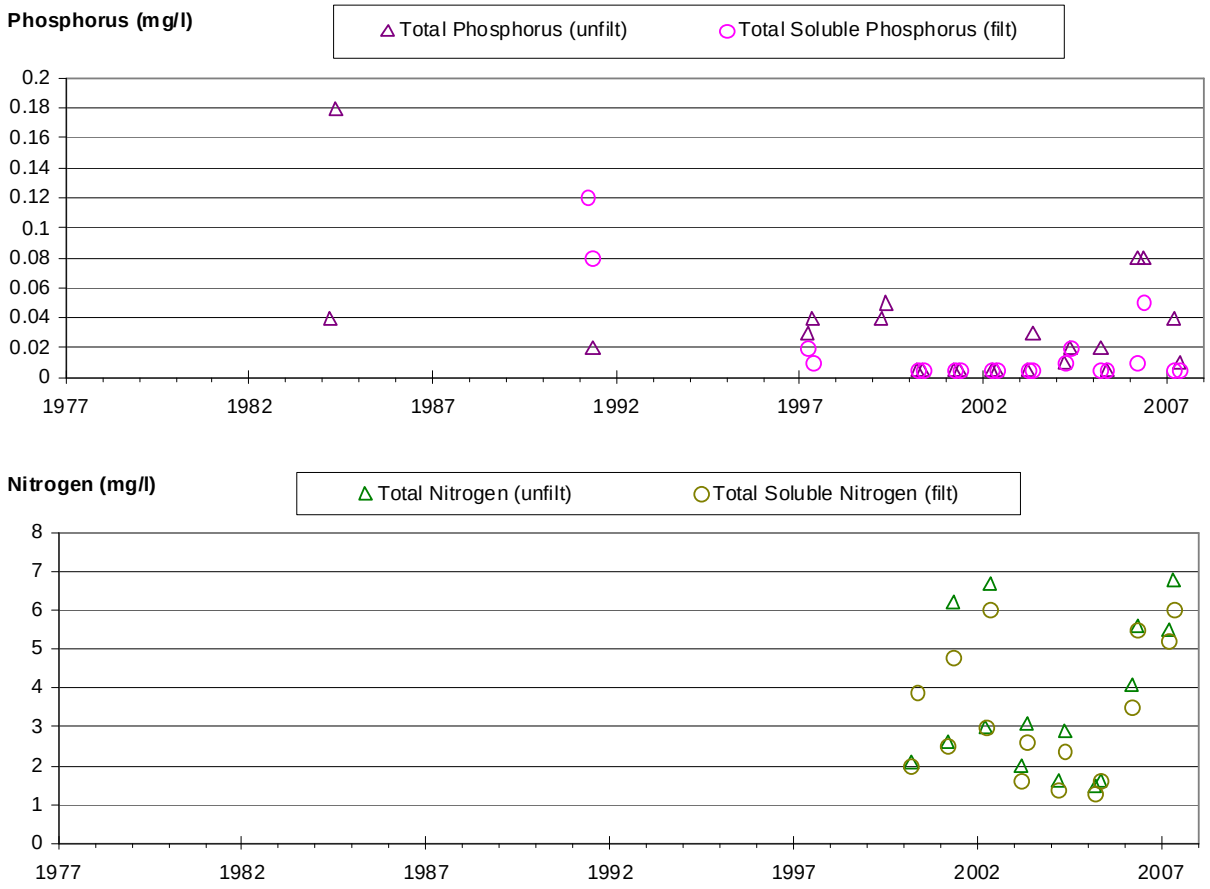
FLAGSTAFF (C)



Notes:

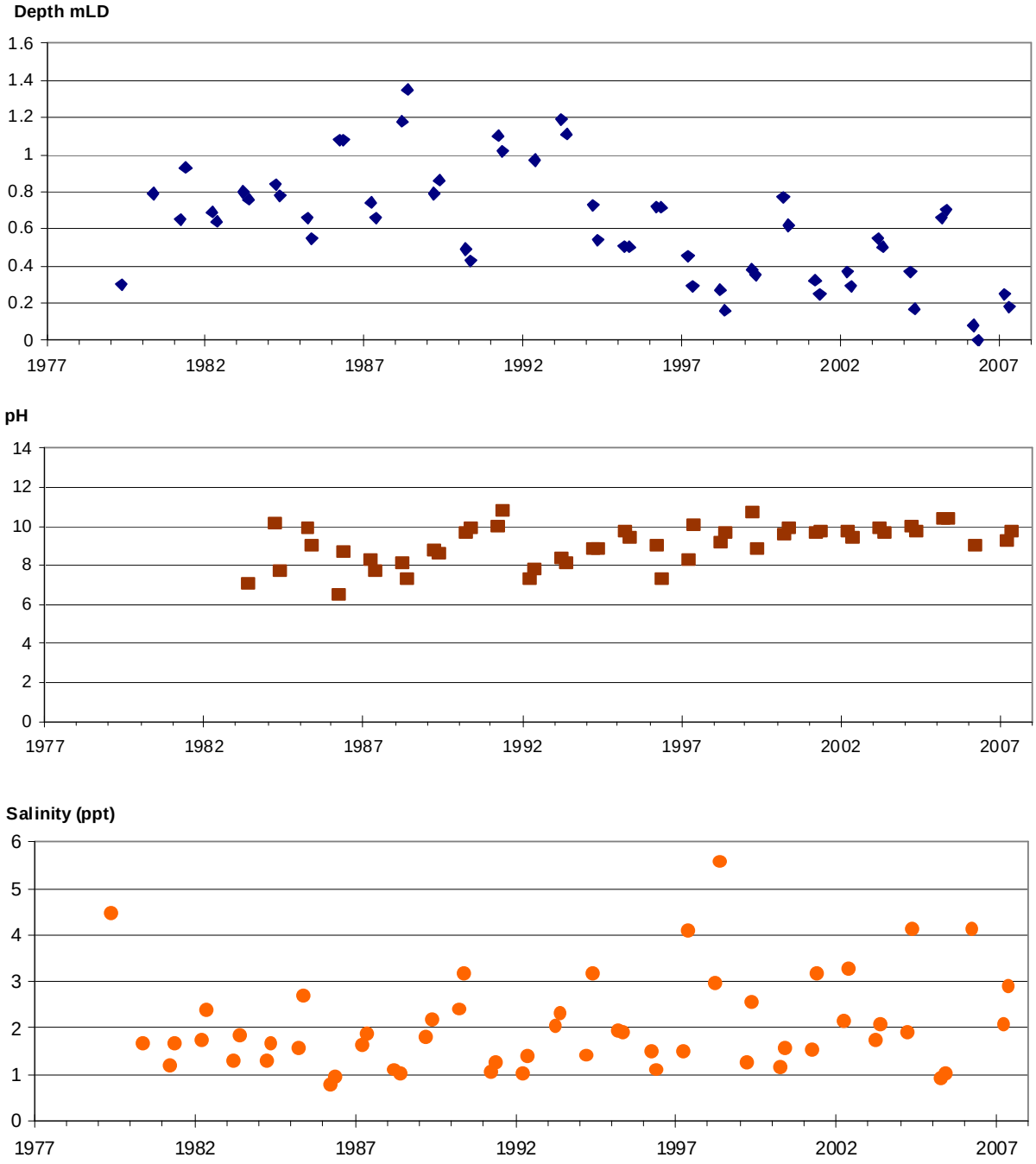
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

FLAGSTAFF



Flagstaff is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

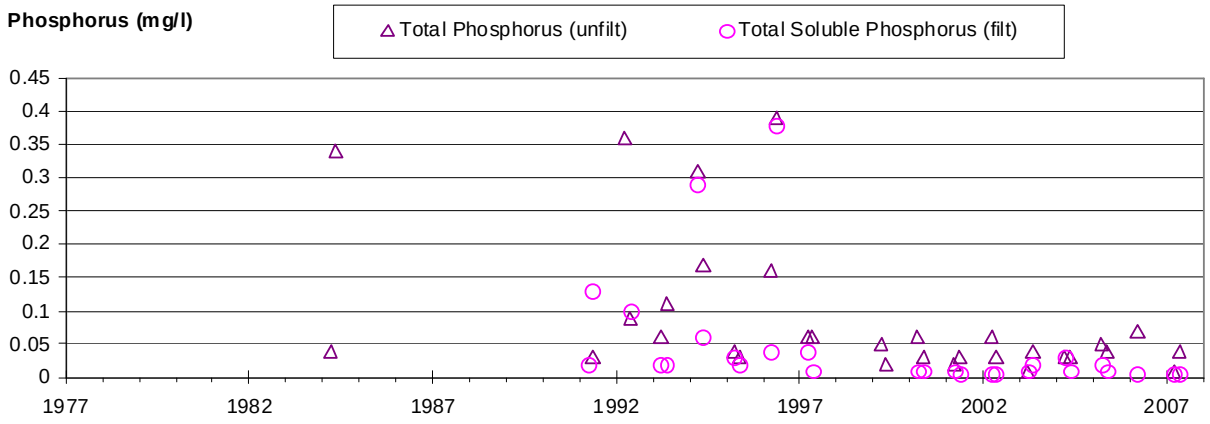
FORRESTDALE (C)

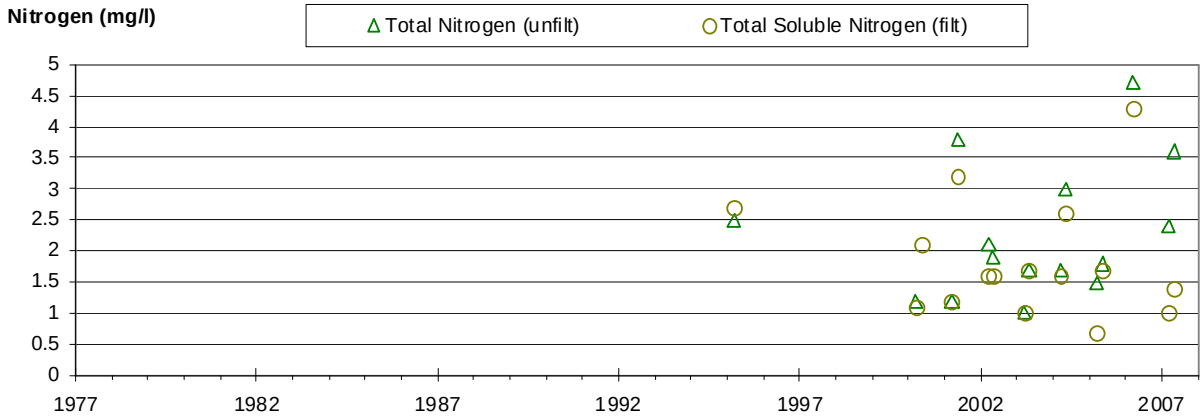


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

FORRESTDALE



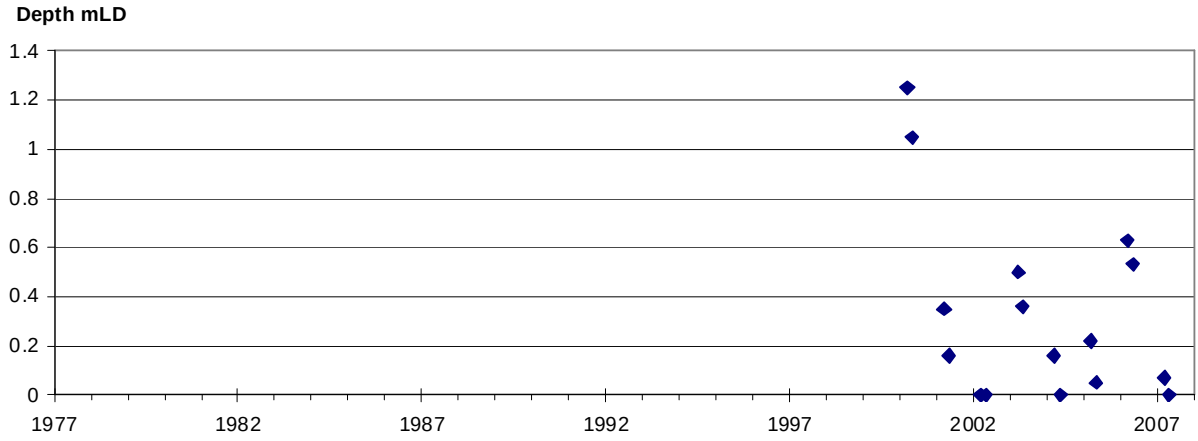


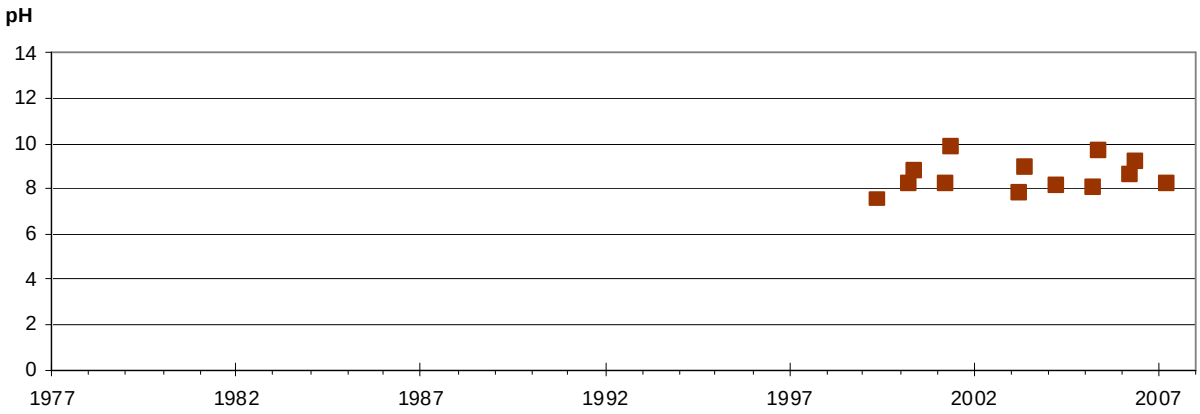
Forrestdale Lake is a component of the 'Forrestdale and Thomsons Lakes' system, which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

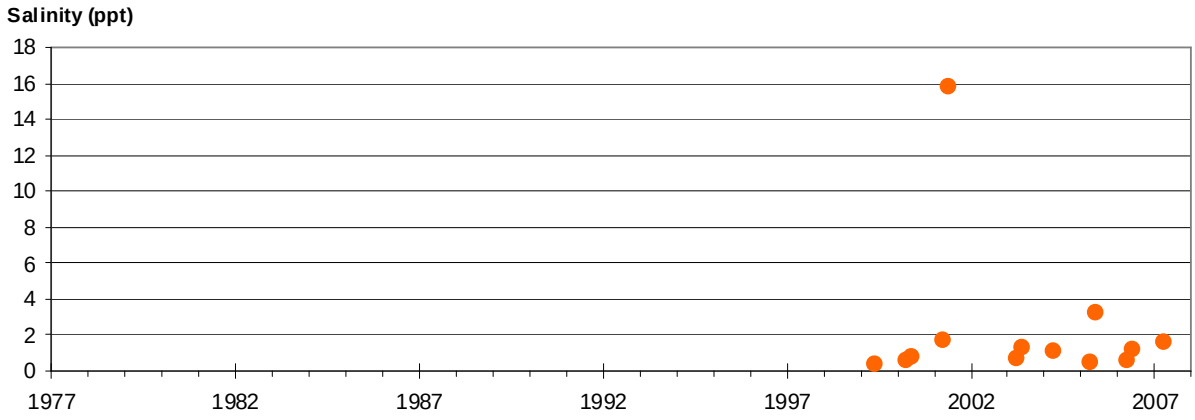
Forrestdale Lake is also listed in the 'Directory of Important Wetlands in Australia'.

Forrestdale is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

FRASERS (C, IM)

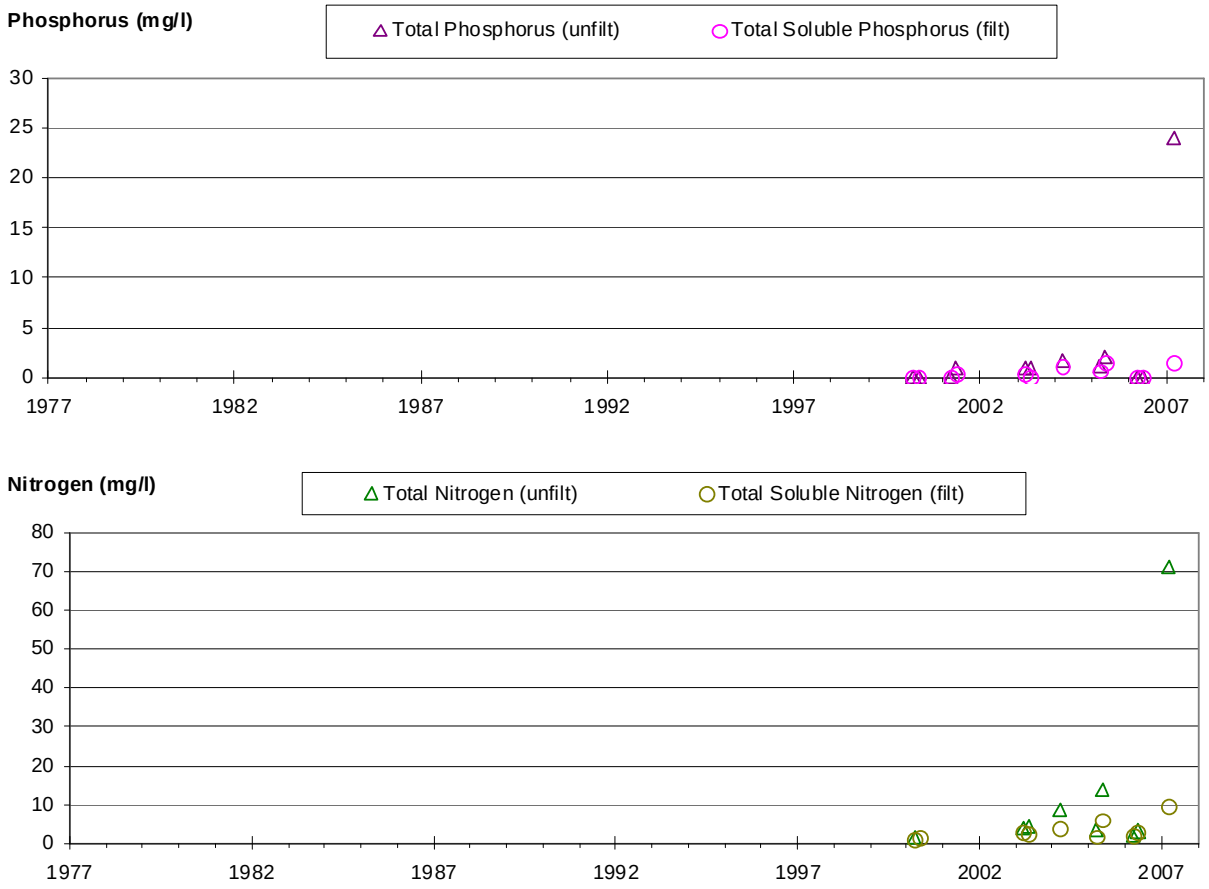






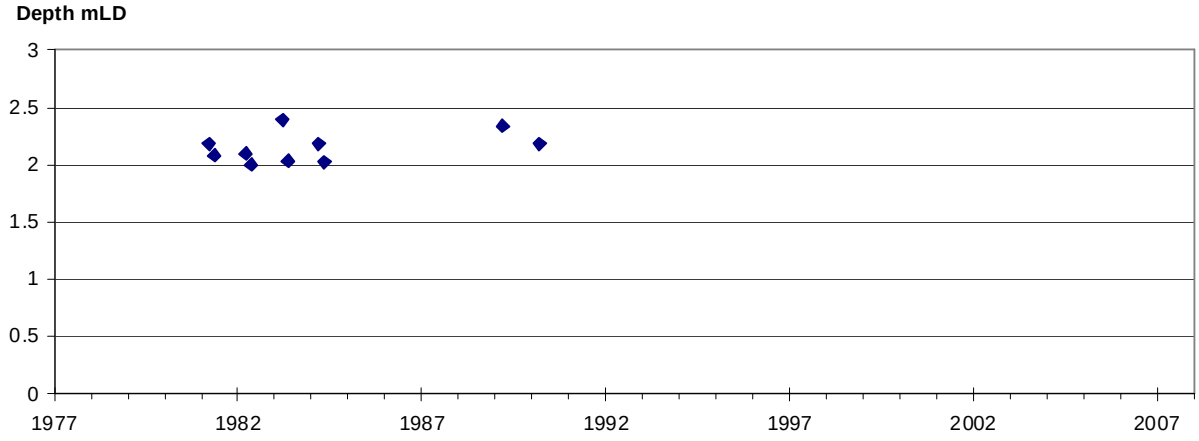
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

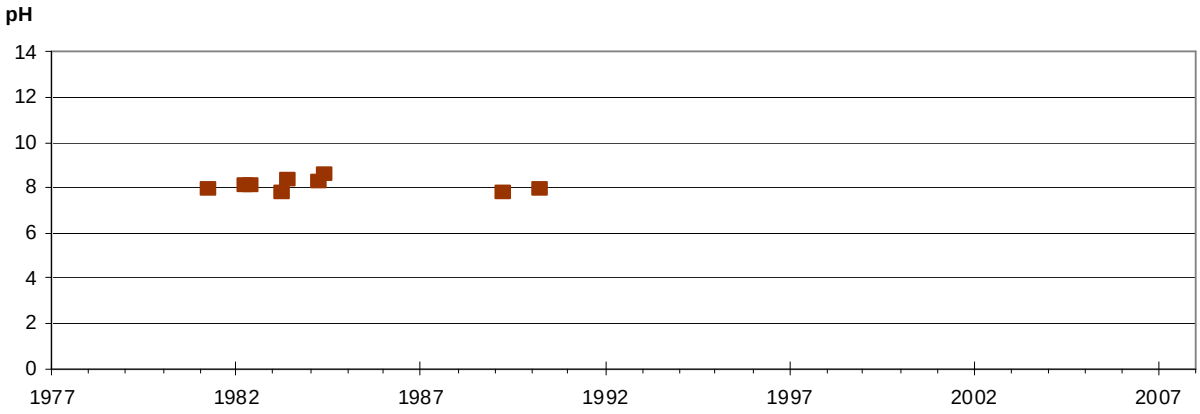
FRASERS

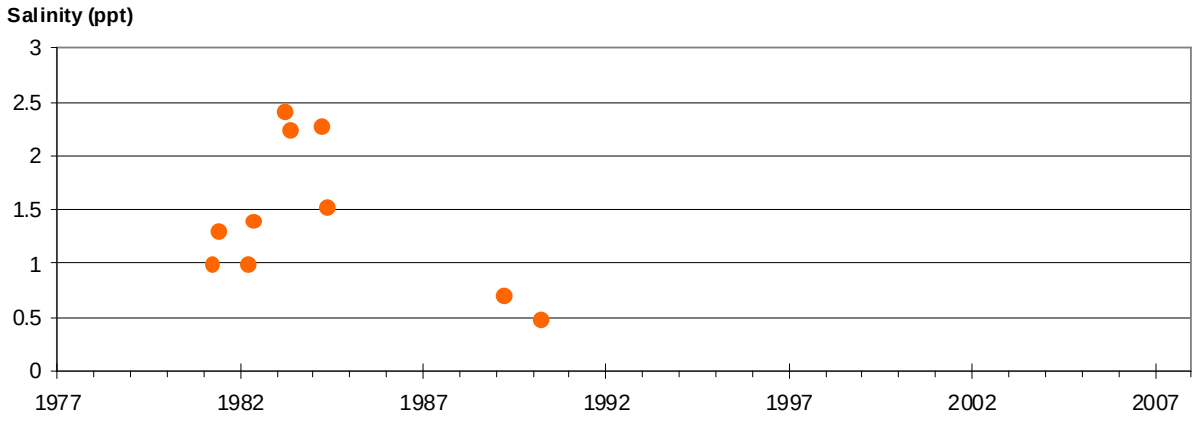


Frasers is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

GARDNER (H)

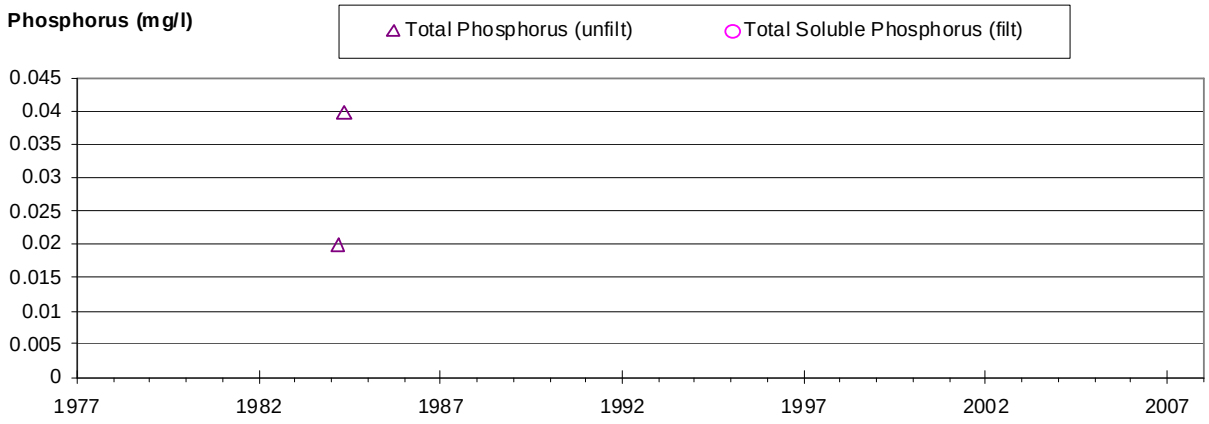


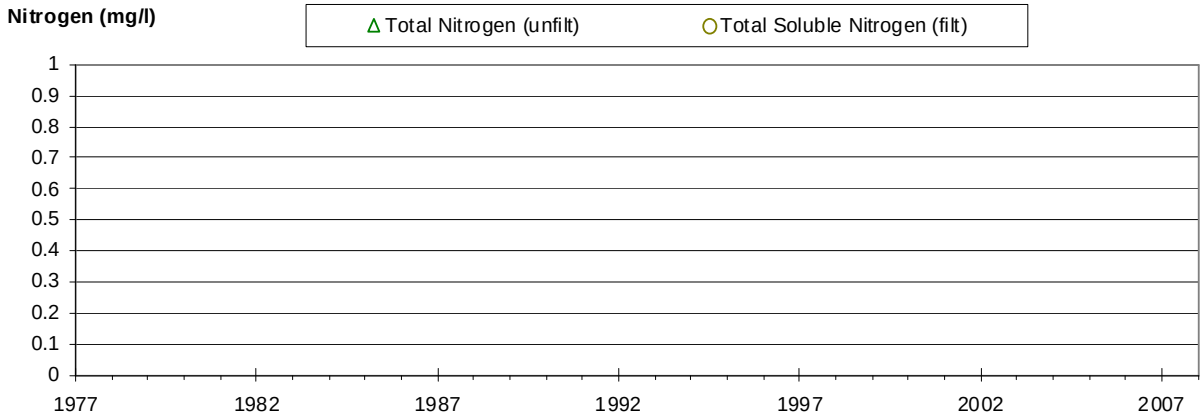




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

GARDNER





Gardner is a component of the 'Moates Lake System', which is listed in the 'Directory of Important Wetlands in Australia'

Gardner is in the Albany District of the South Coast DEC Region

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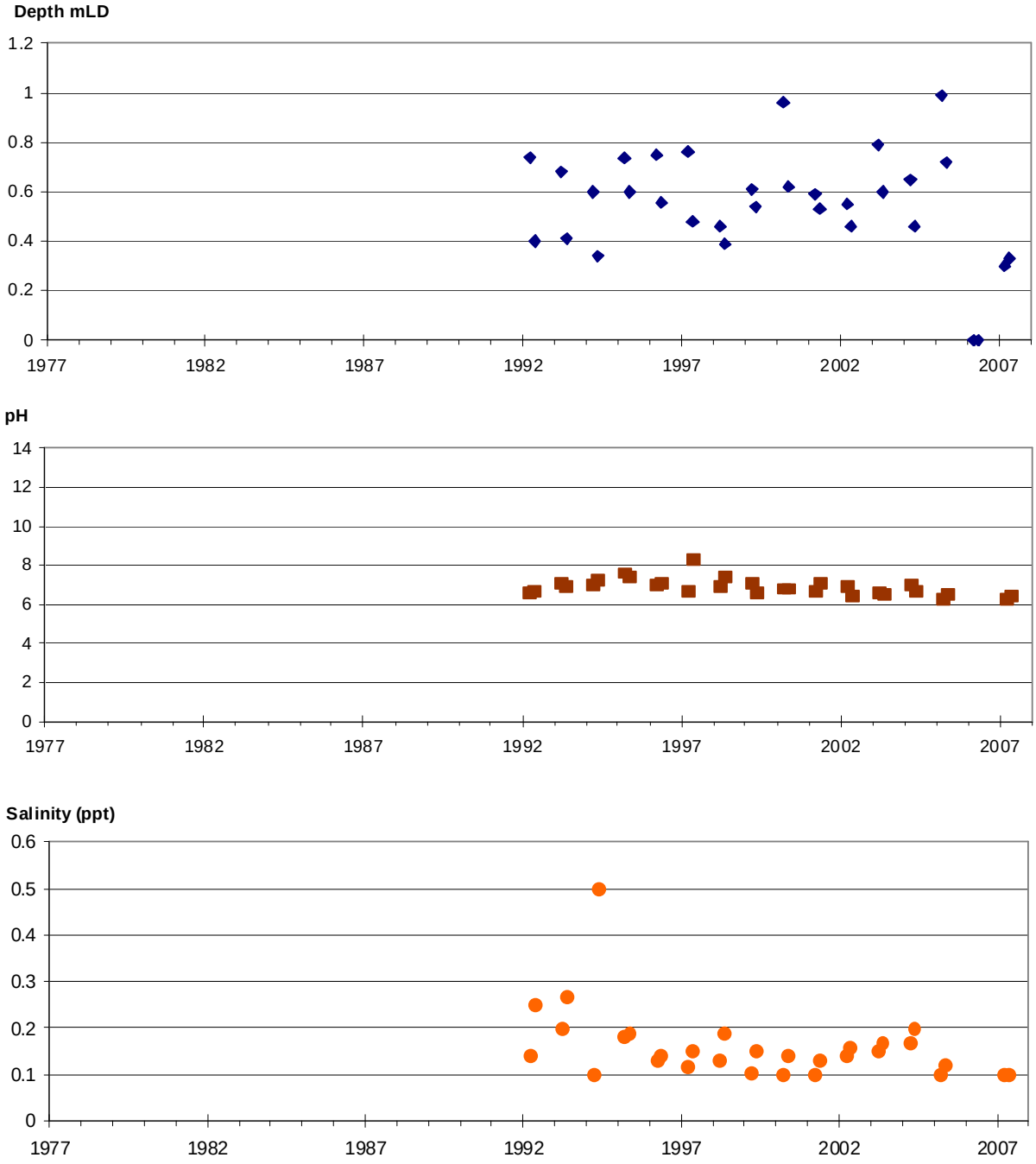
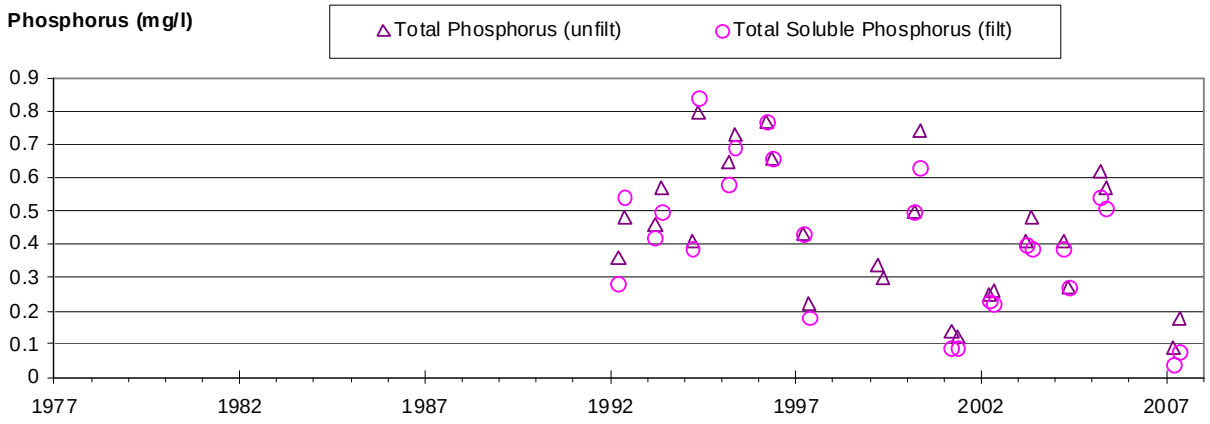
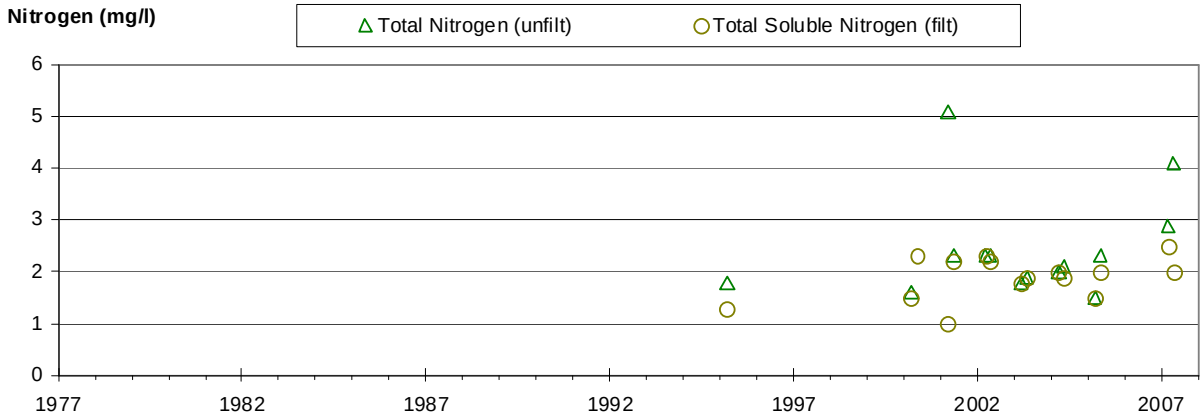
GIBBS (C)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

GIBBS

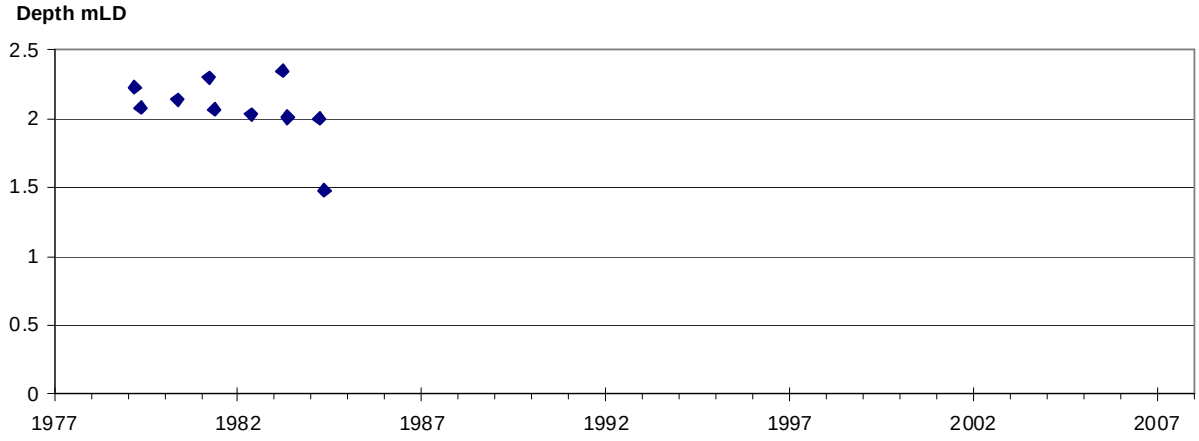


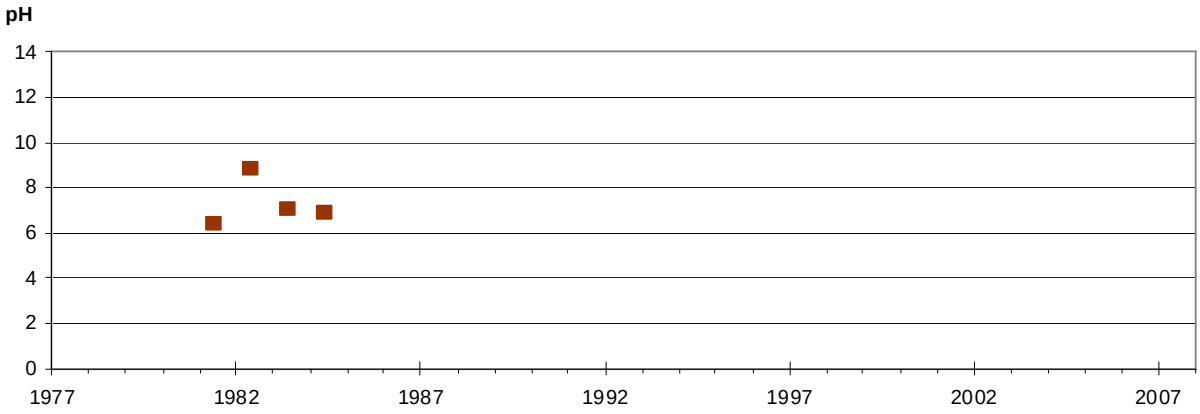


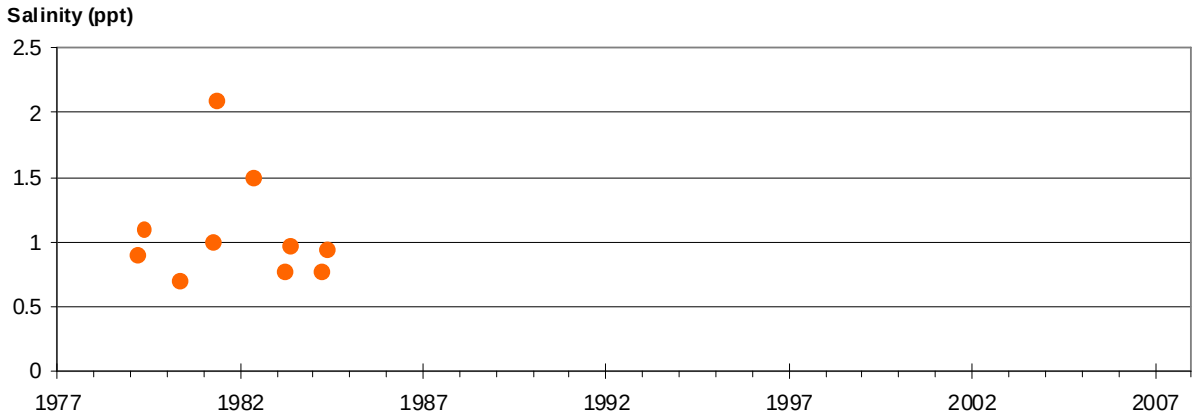
Gibbs is a component of the 'Gibbs Road Swamp System', which is listed in the 'Directory of Important Wetlands in Australia'.

Gibbs is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

GINGIN 31241 (H)

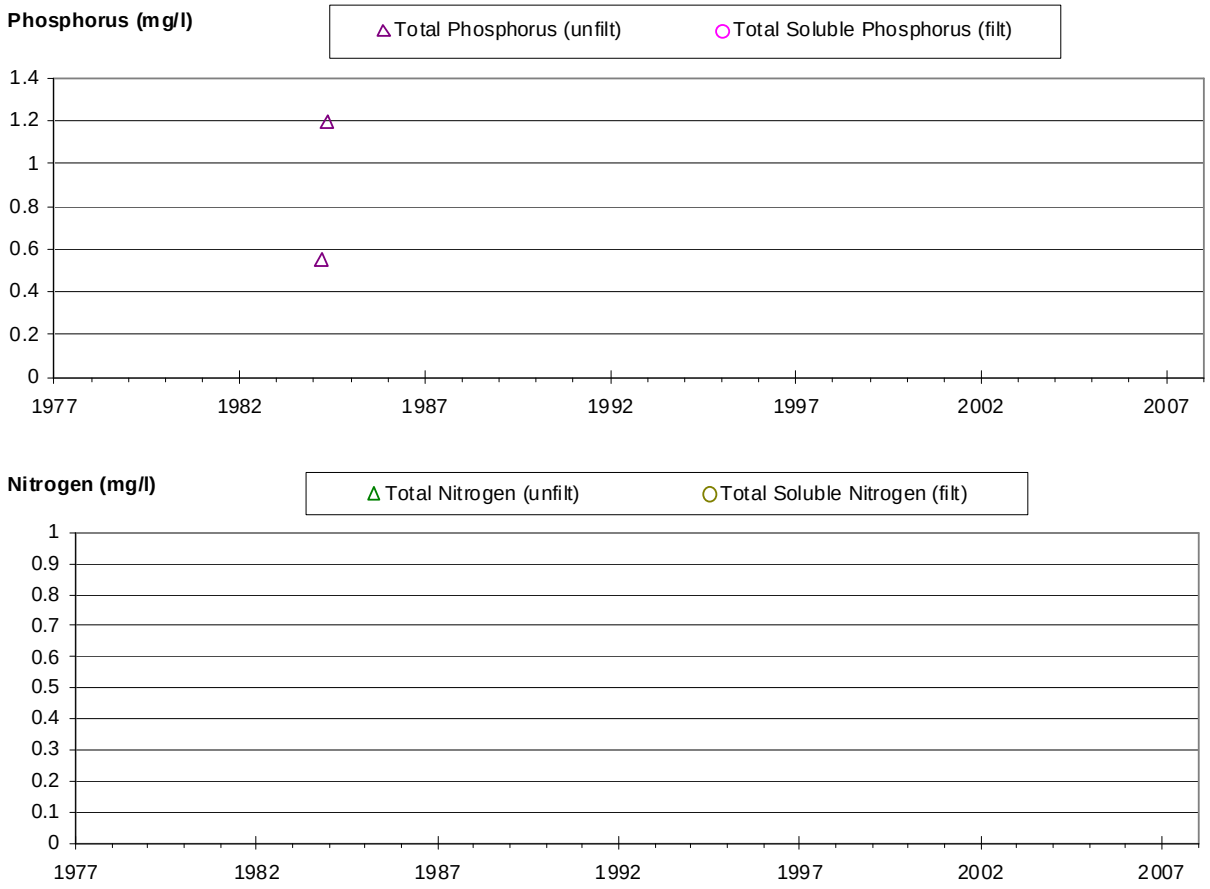






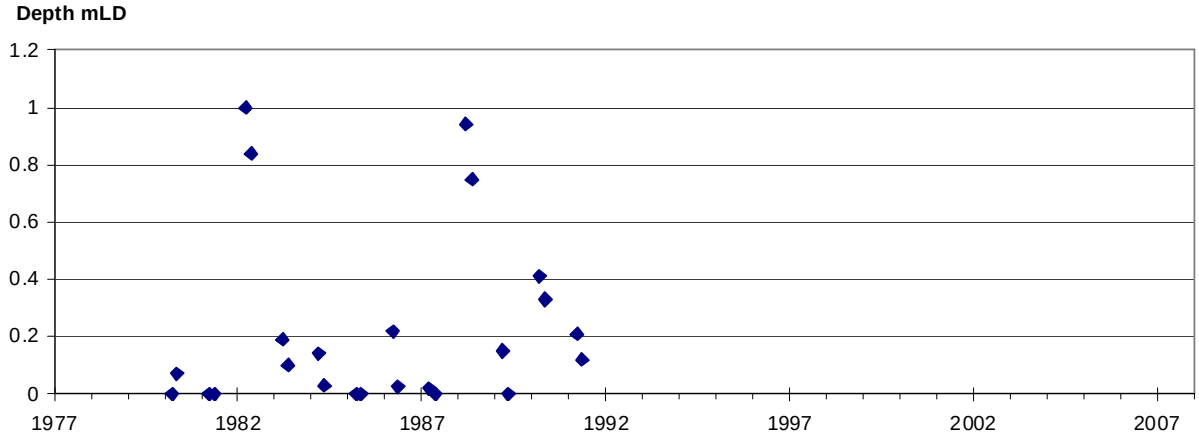
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

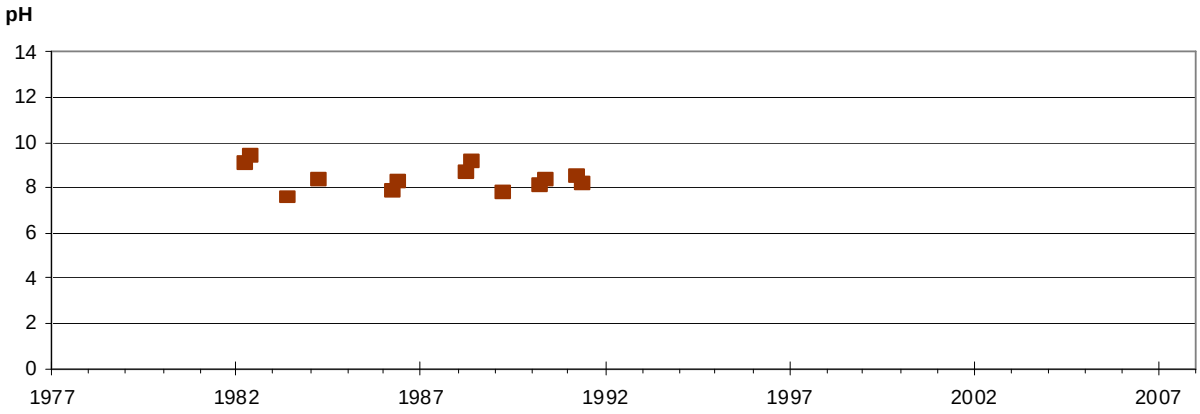
GINGIN 31241

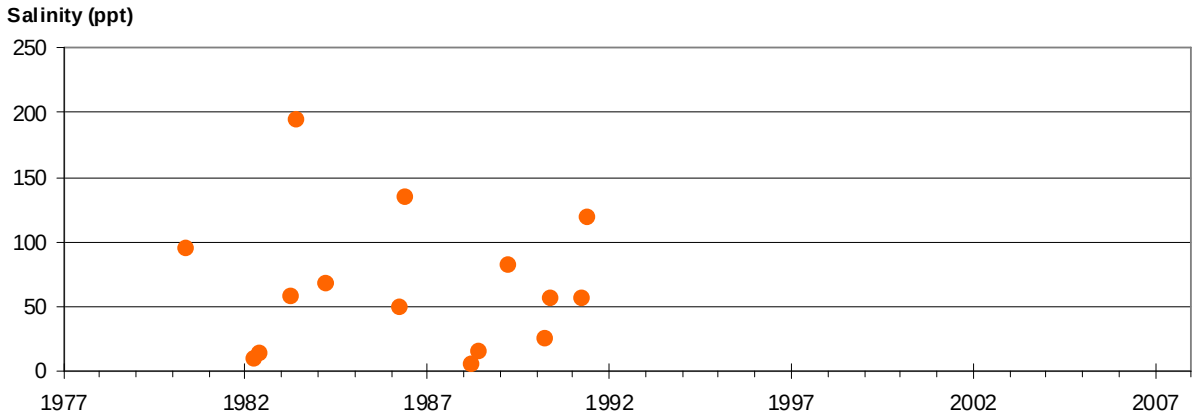


Gingin 31241 is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

GNOWANGERUP 26264 (H)

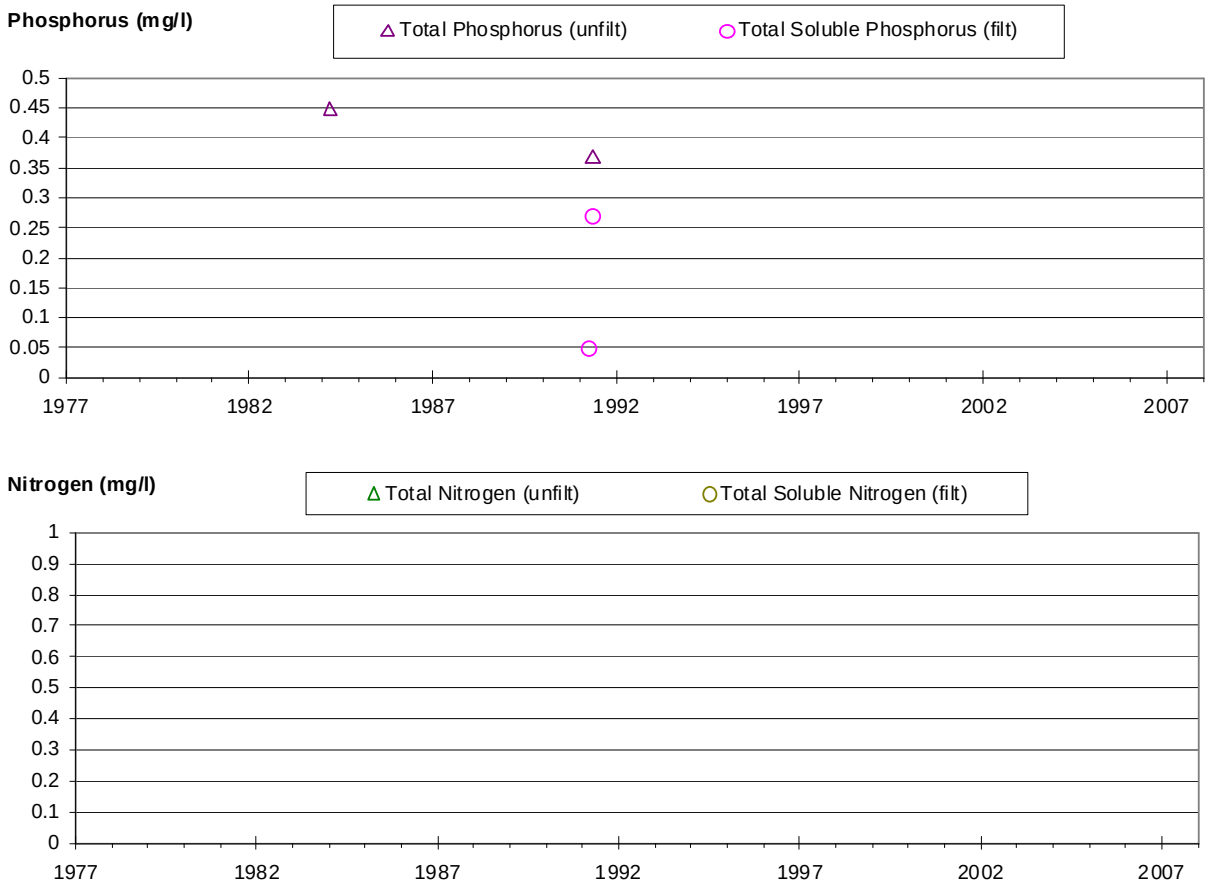






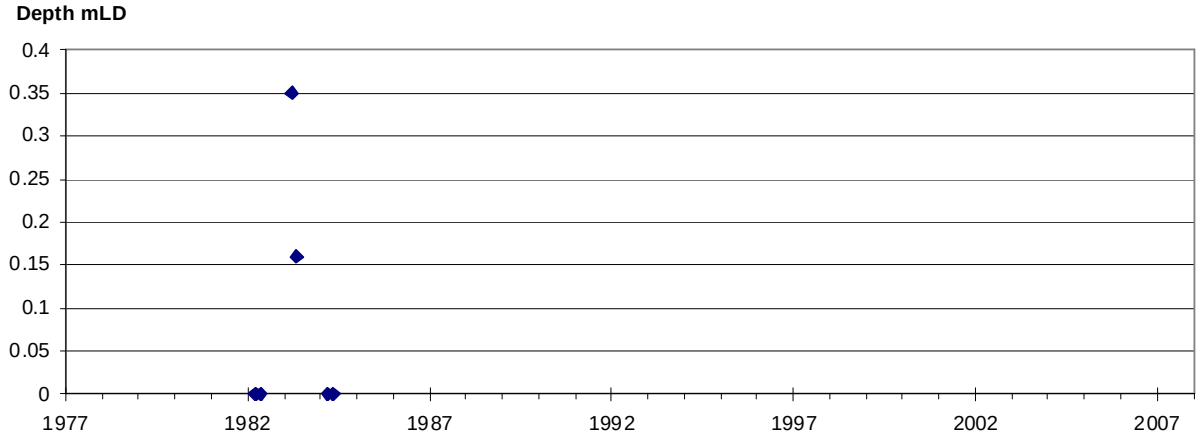
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

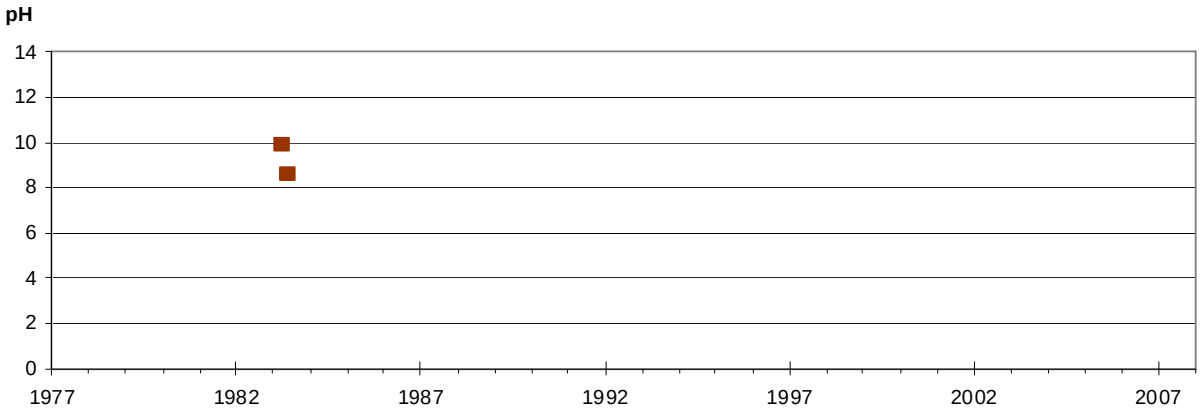
GNOWANGERUP 26264

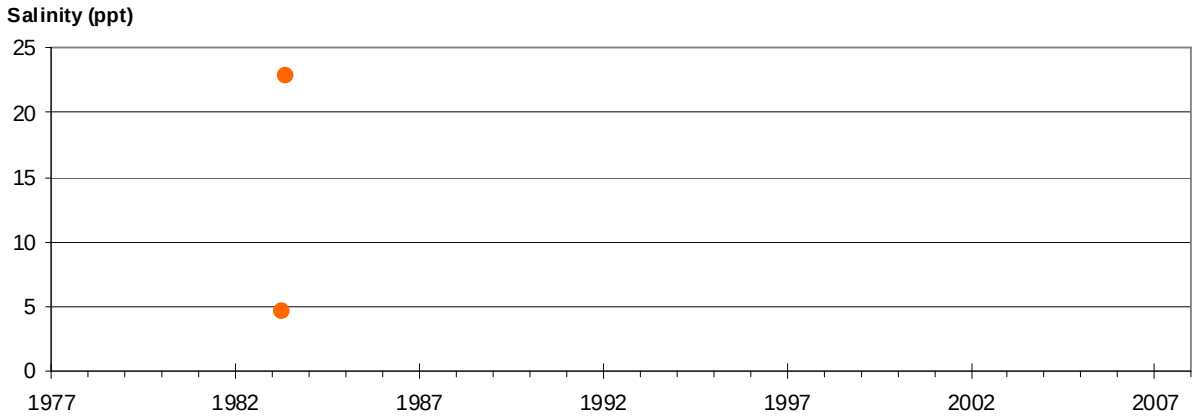


Gnowangerup 26264 is in the Albany District of the South Coast DEC Region.

GNOWANGERUP 26569 (H)

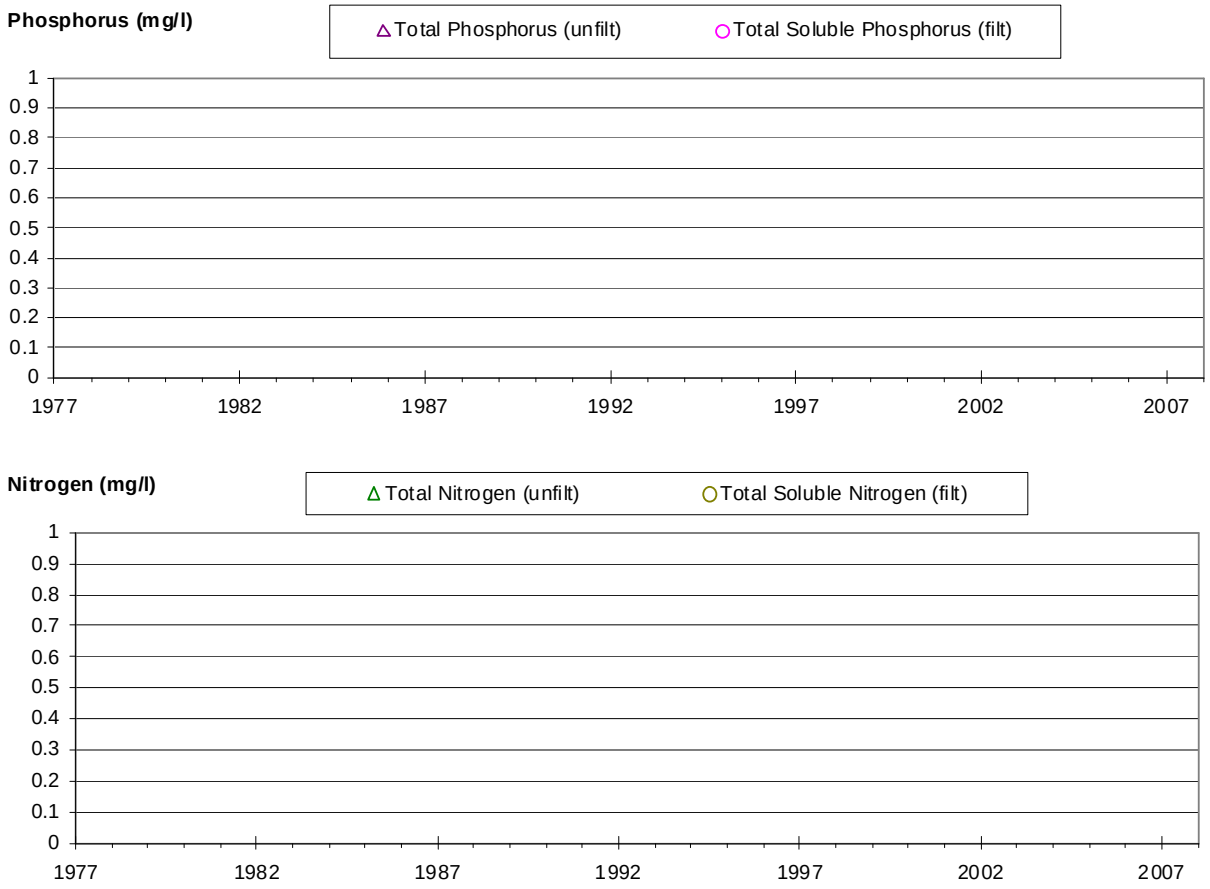






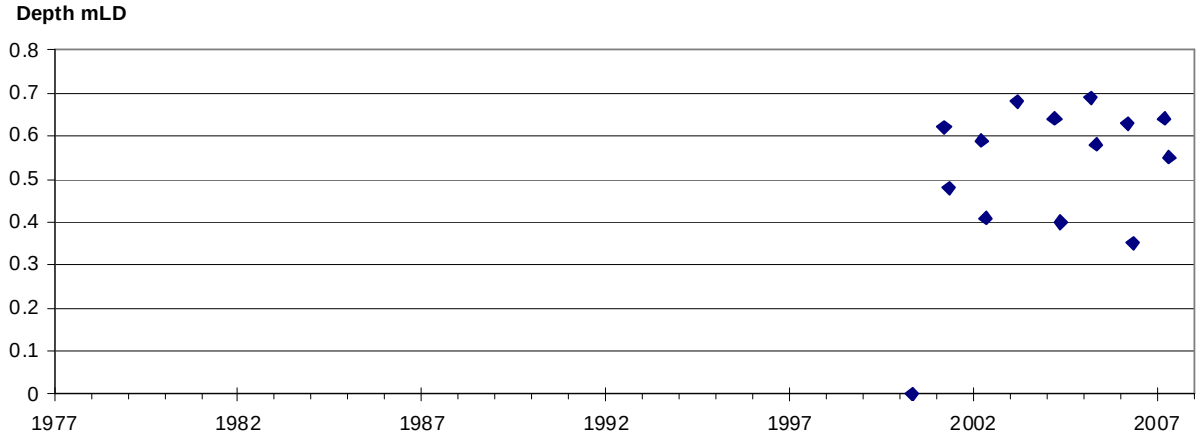
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

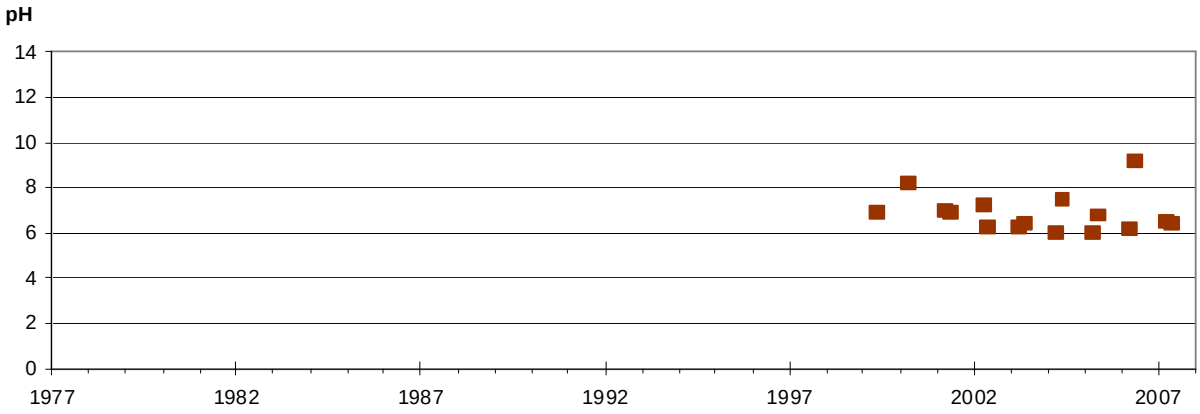
GNOWANGERUP 26569

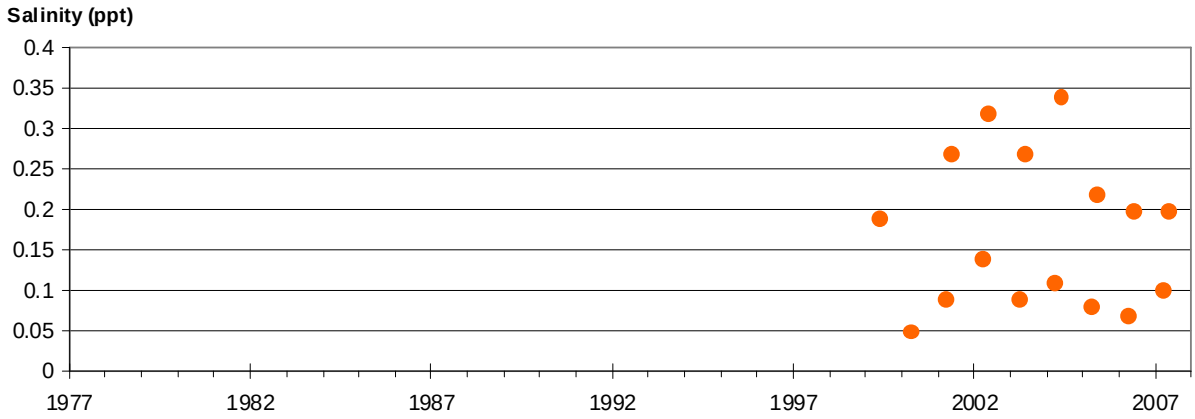


Gnowangerup 26569 is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

GOONAPING (C, IM)

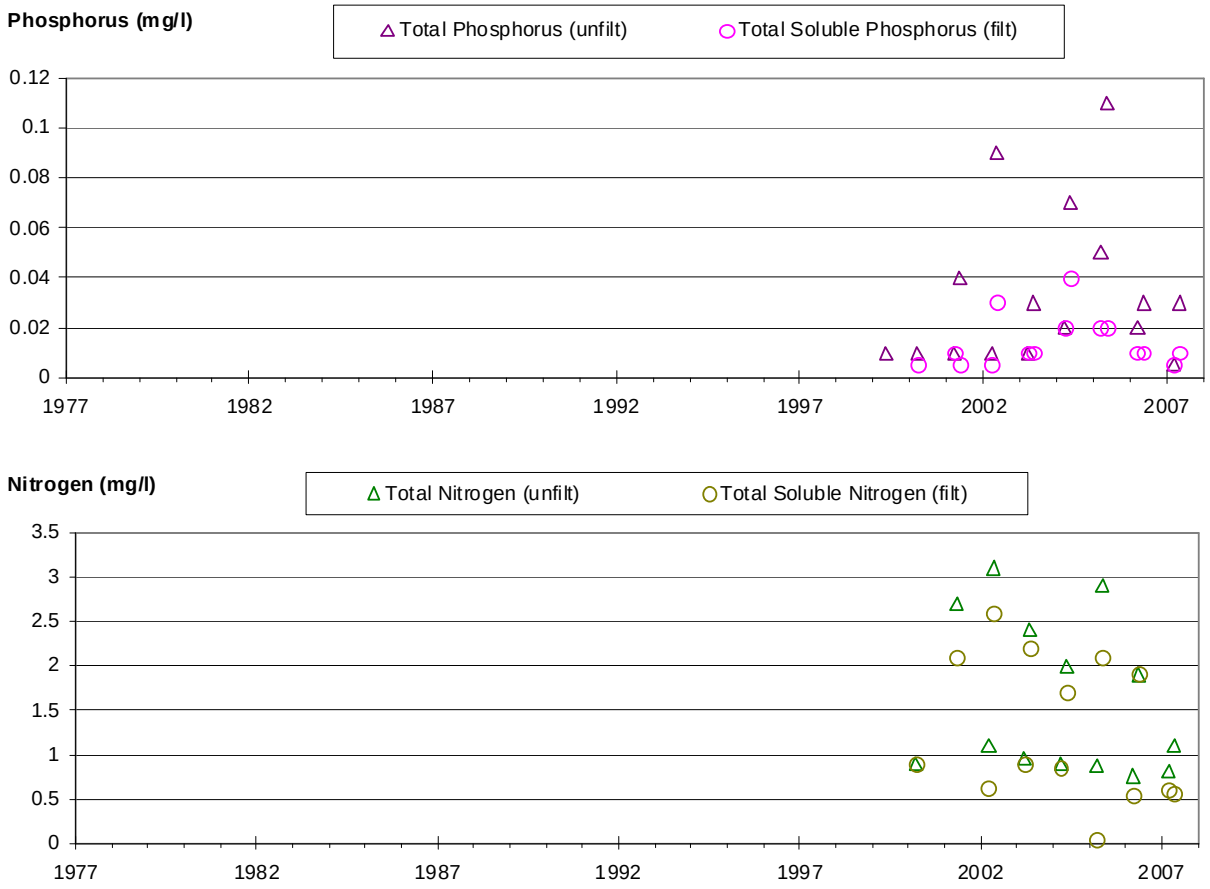






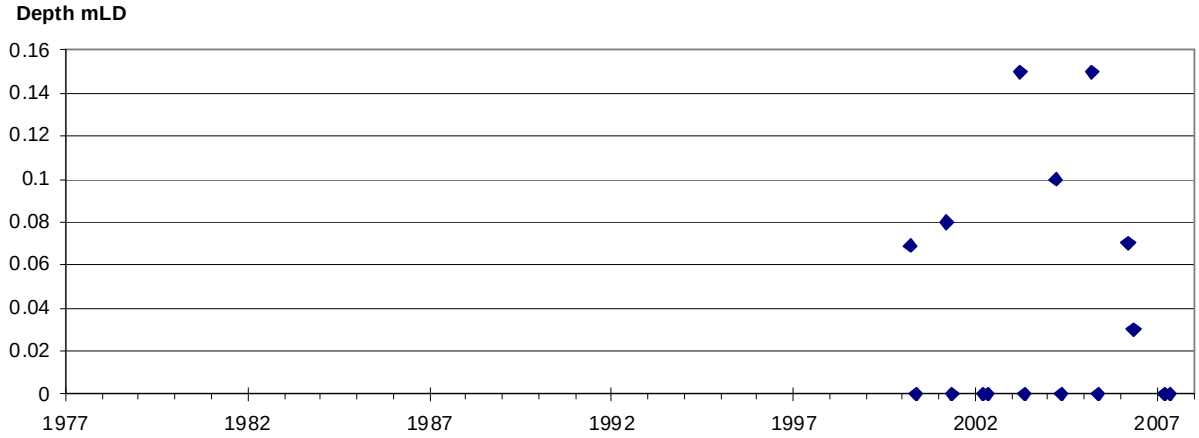
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

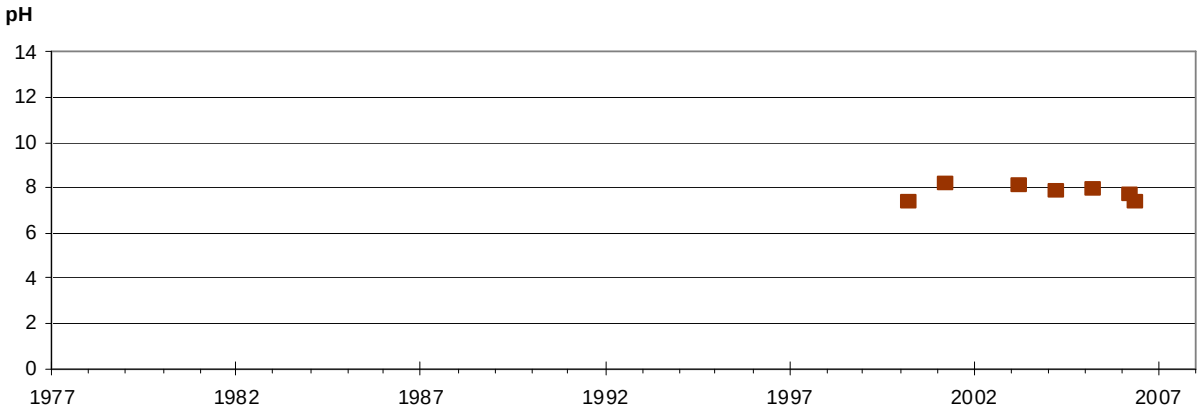
GOONAPING

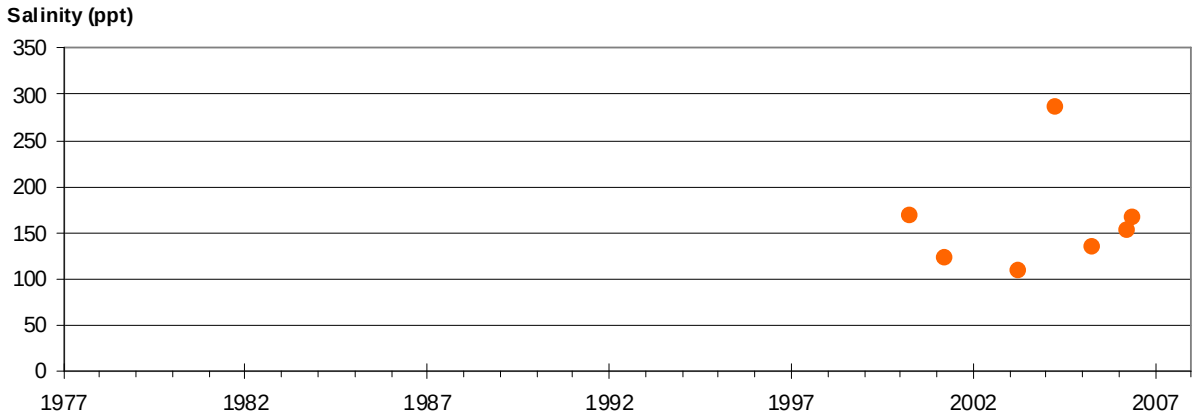


Goonaping is in the Perth Hills District (headquartered in Mundaring) of the Swan DEC Region.

GOORLY (C)

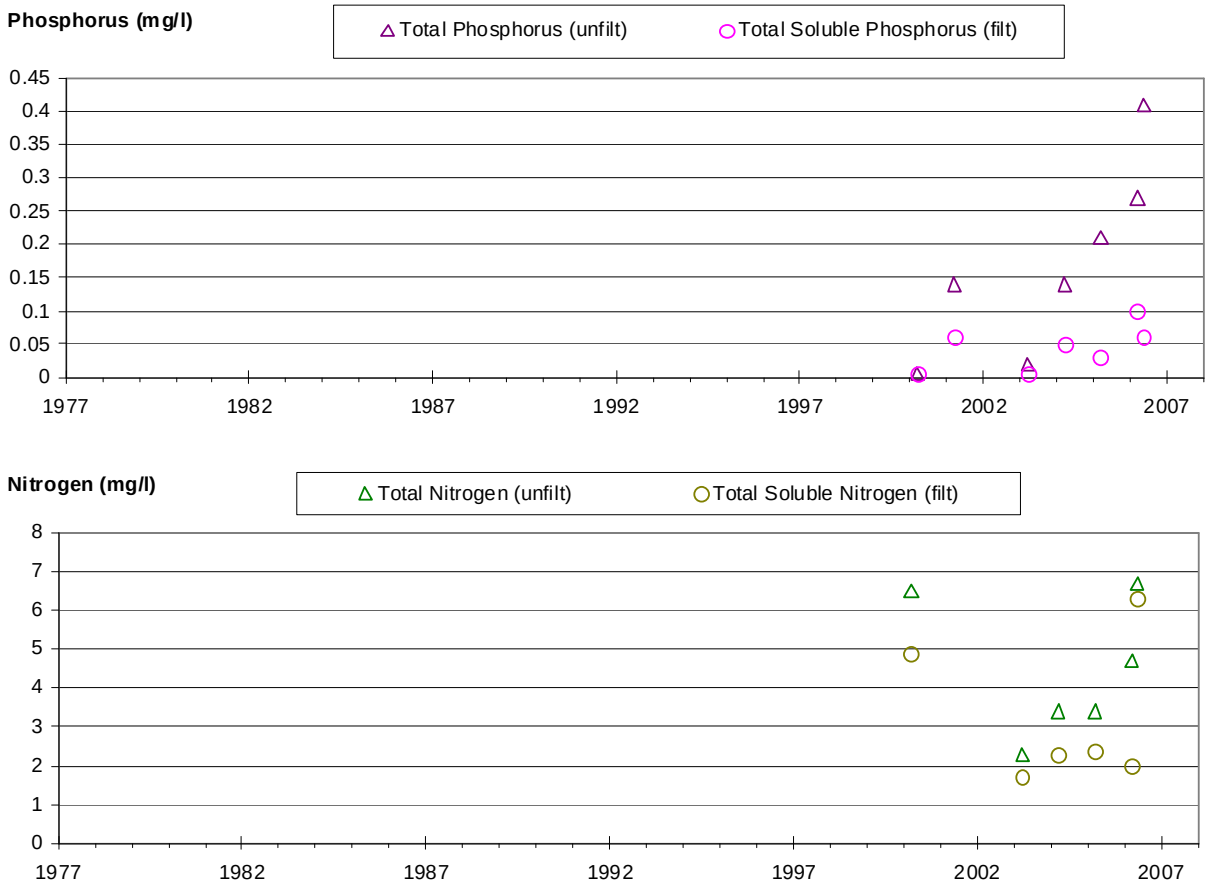






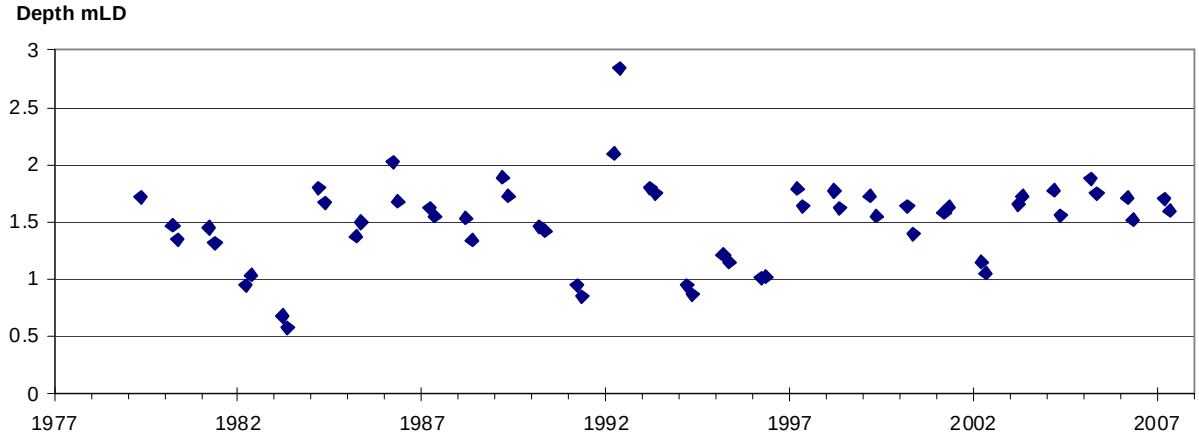
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

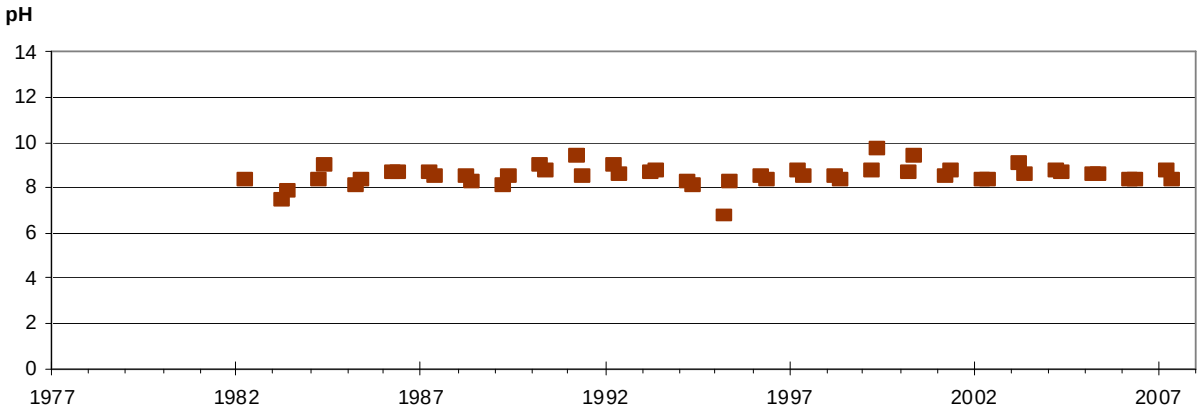
GOORLY

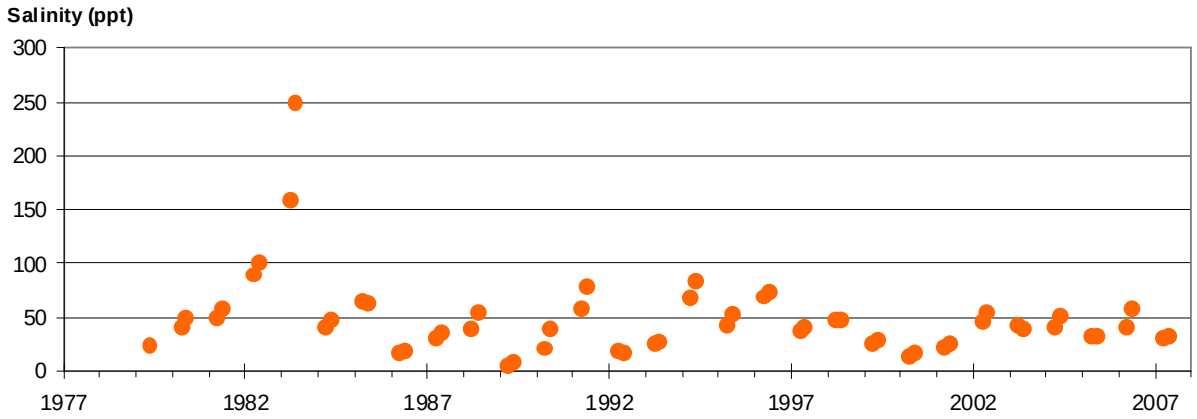


Goorly is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

GORE (C)

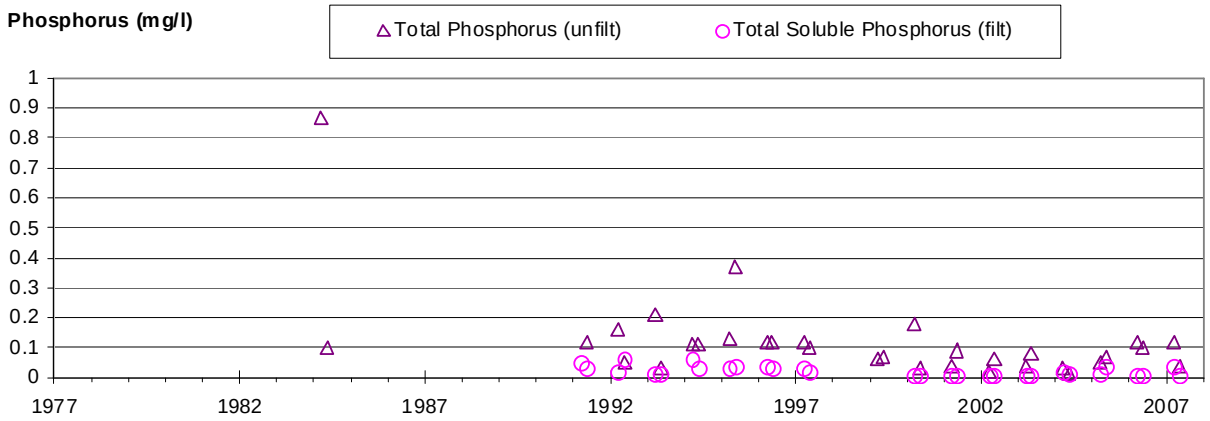


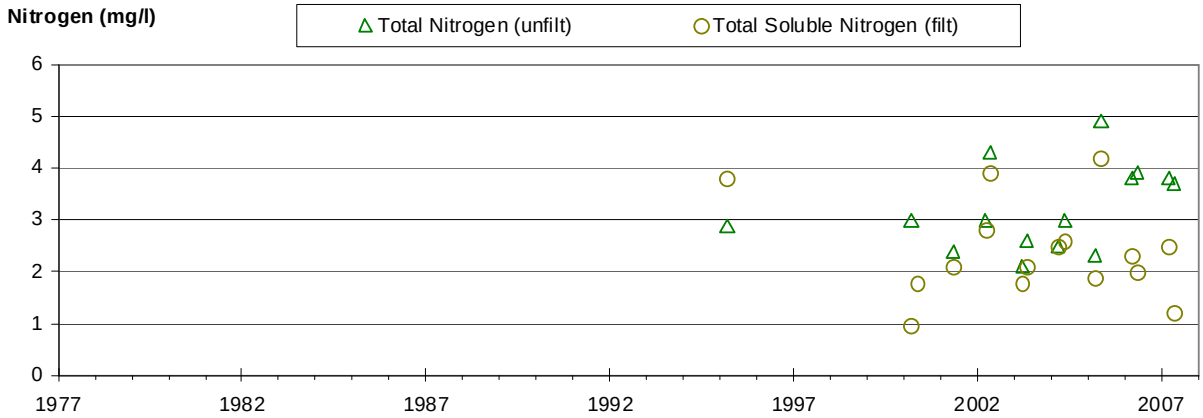




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

GORE



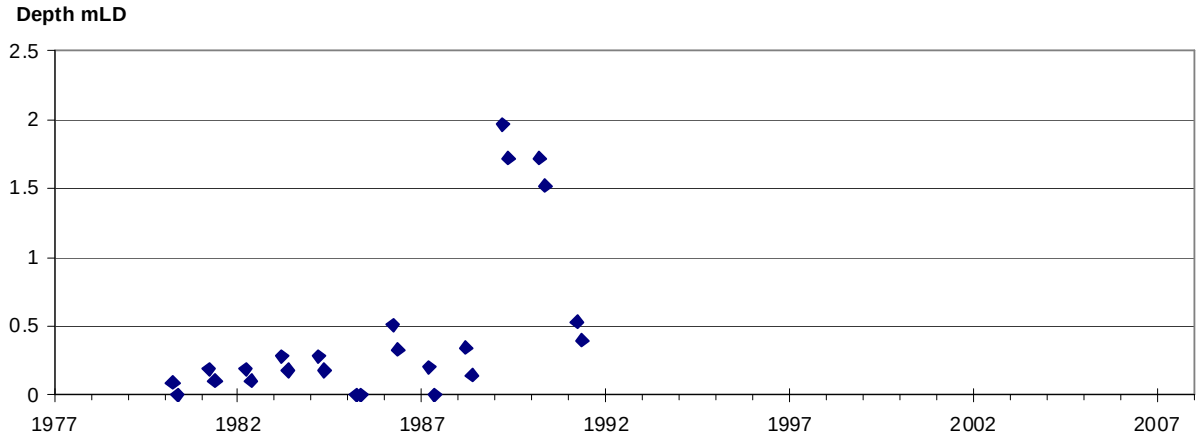


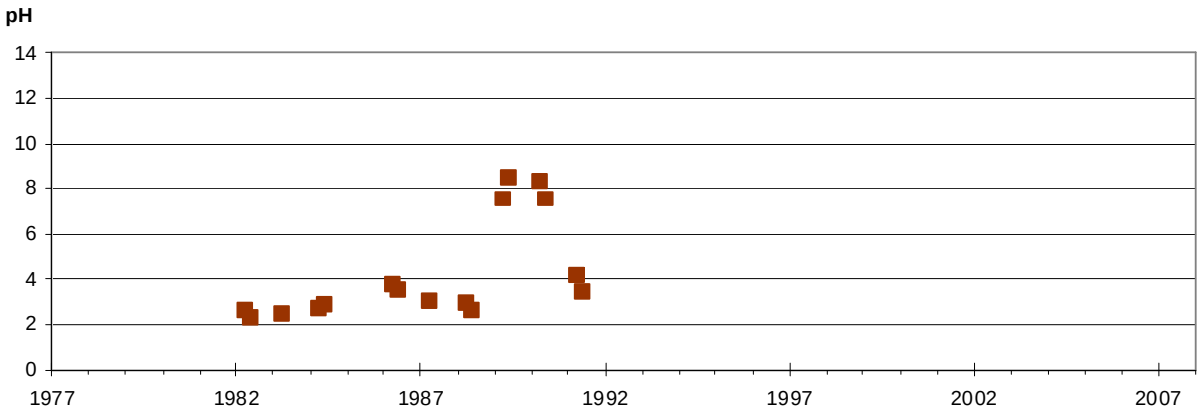
Lake Gore is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

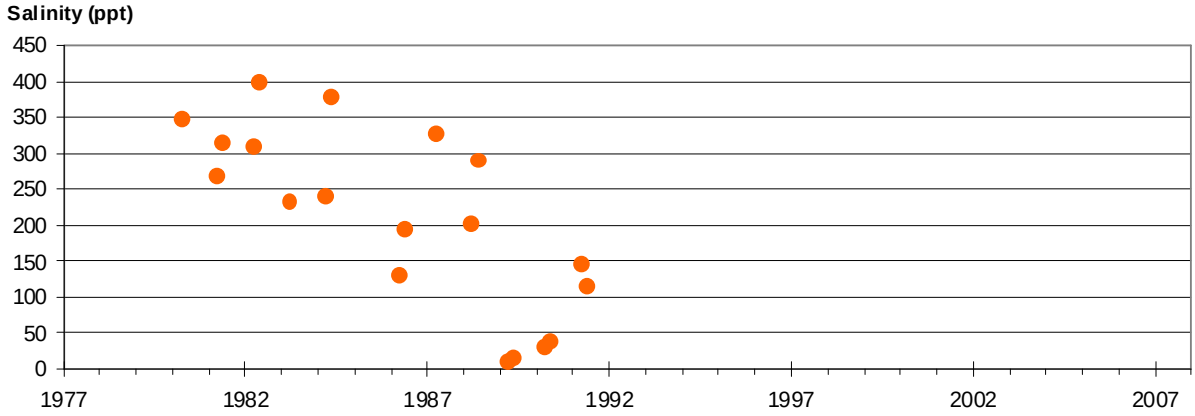
Lake Gore is also a component of the 'Lake Gore System', which is listed in the 'Directory of Important Wetlands in Australia'.

Gore is in the Esperance District of the South Coast DEC Region.

GOUNTER (H)

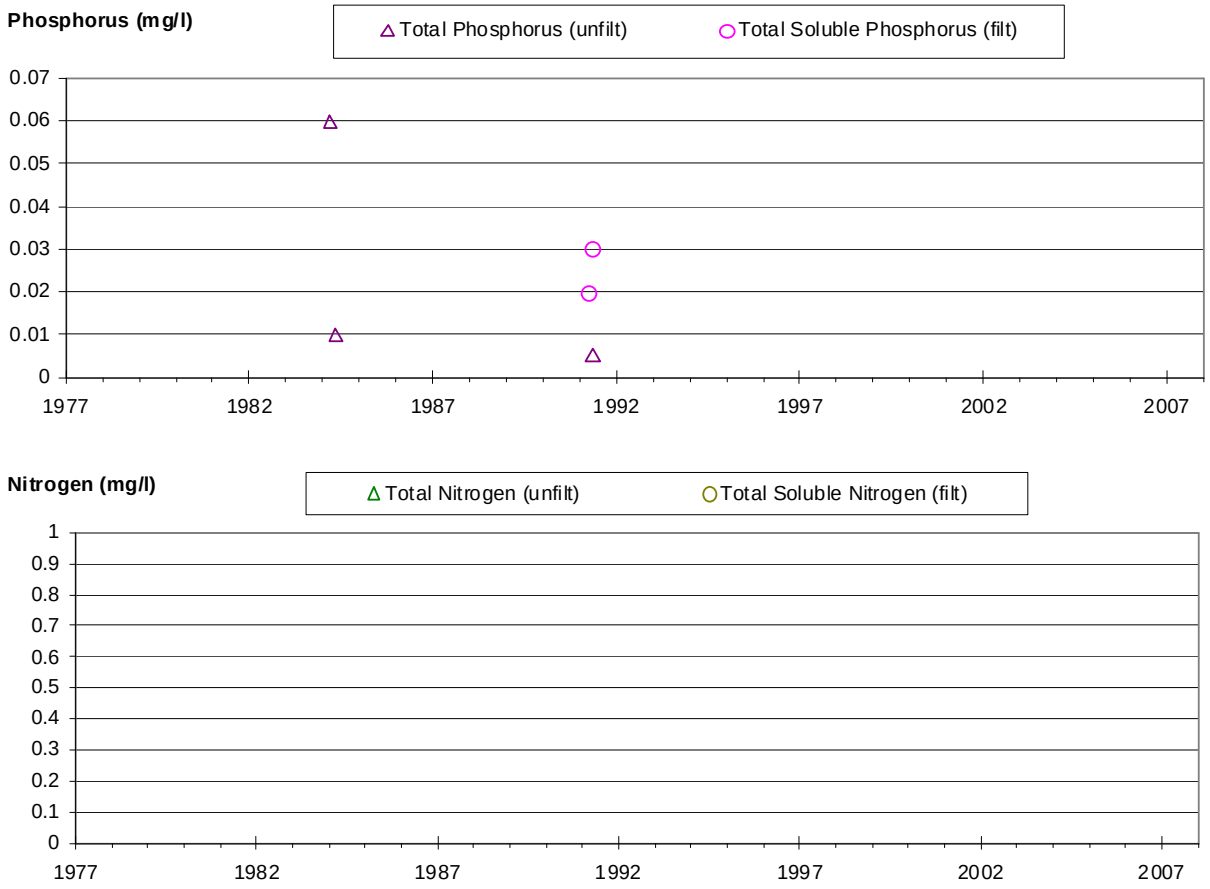






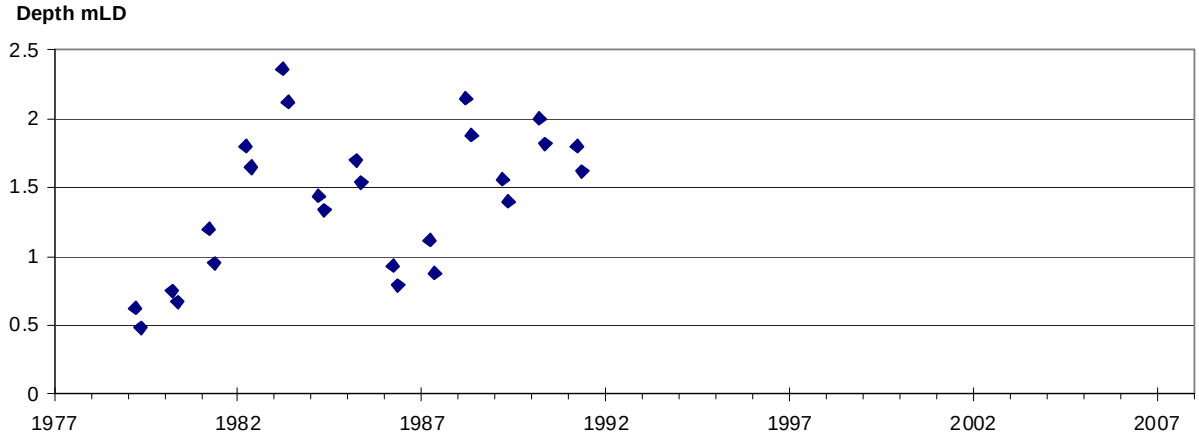
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

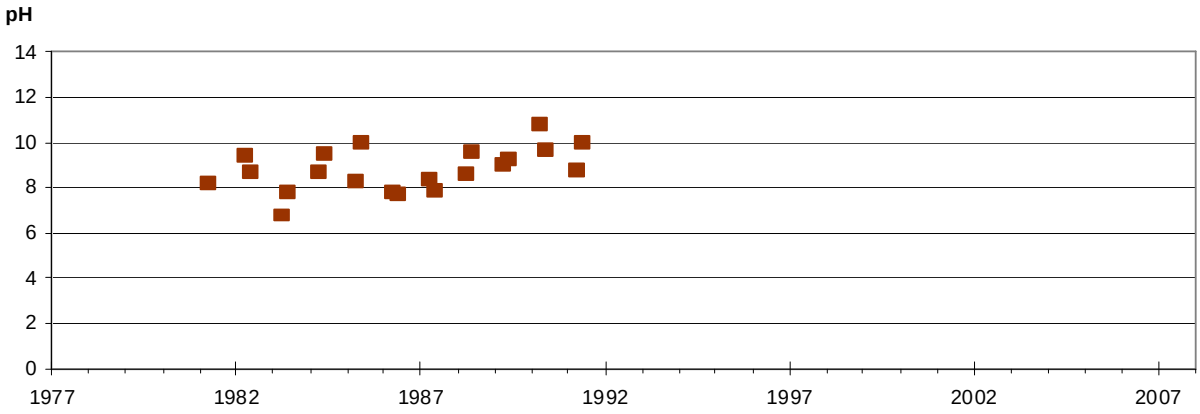
GOUNTER

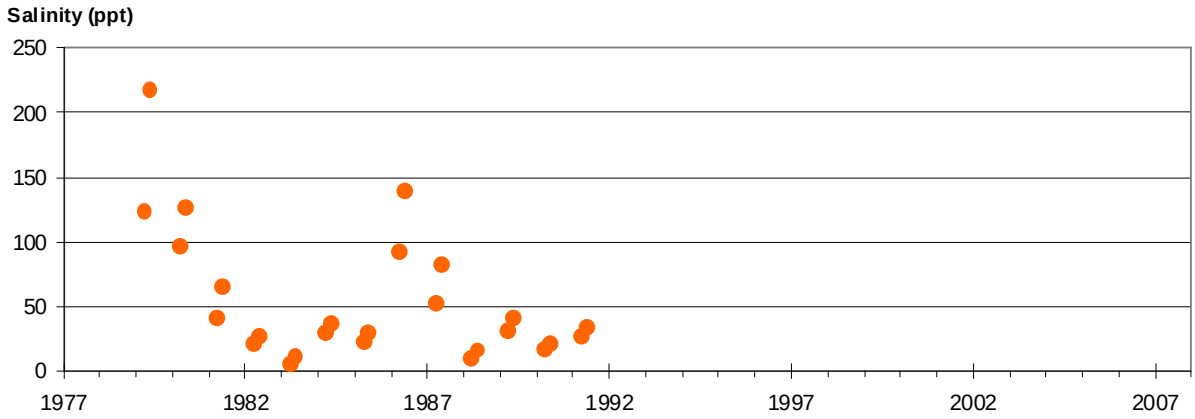


Gounter is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

GUNDARING (H)

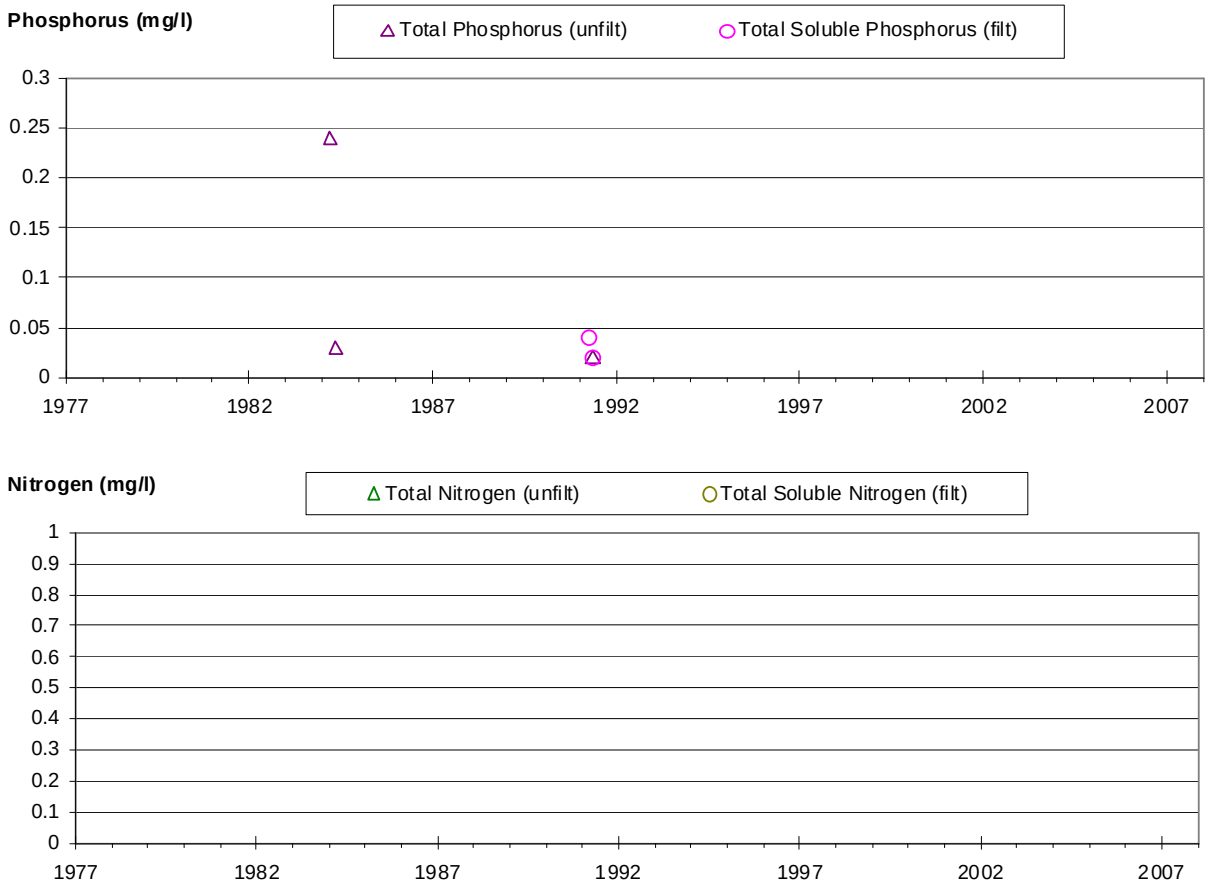






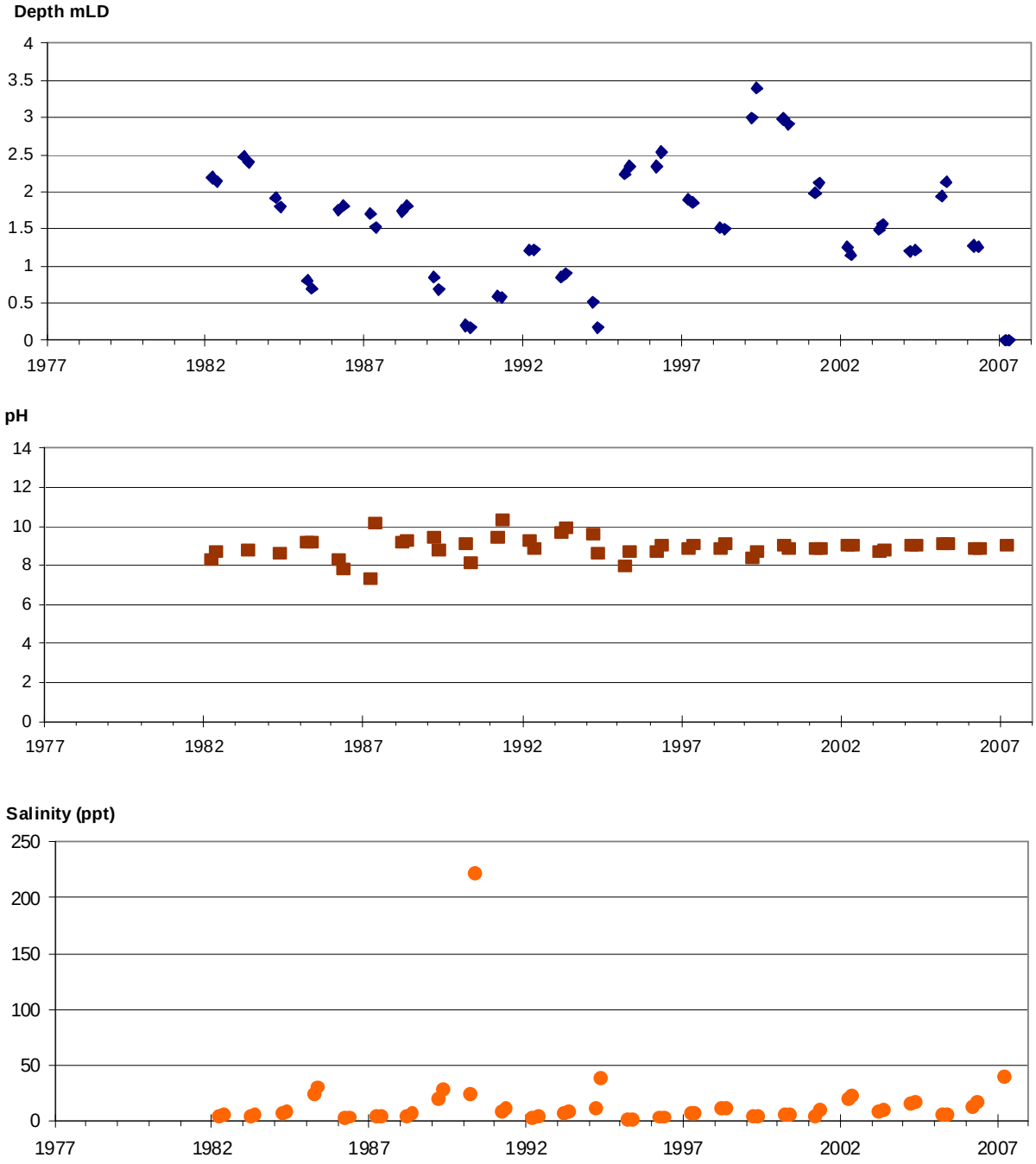
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

GUNDARING



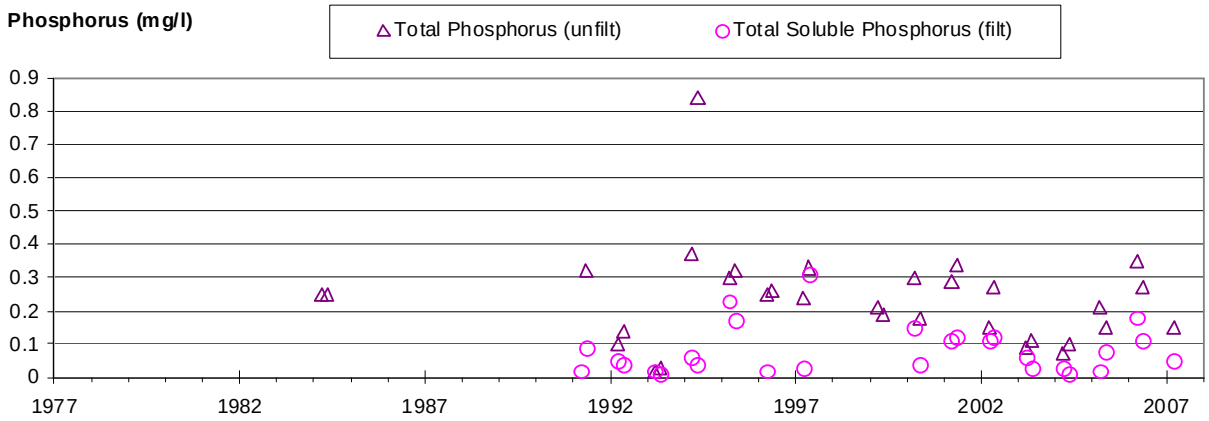
Gundaring is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

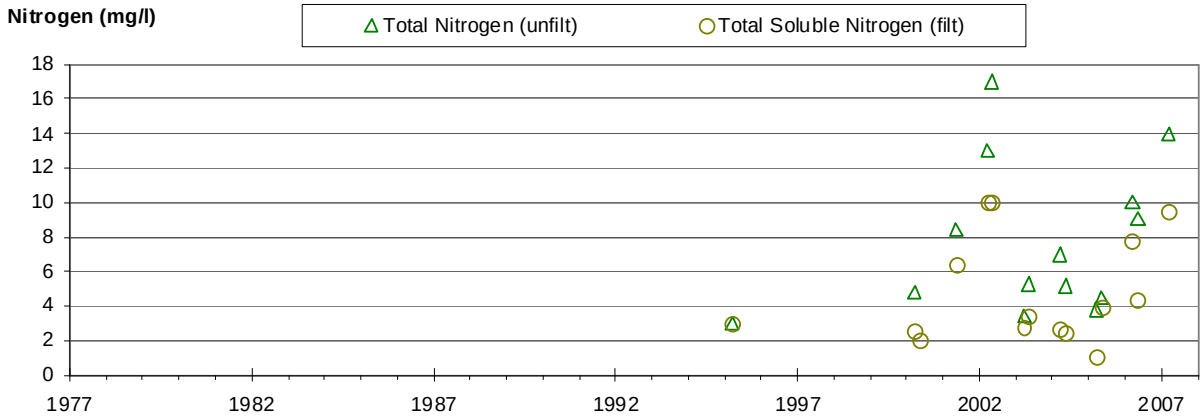
GURAGA (C)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

GURAGA

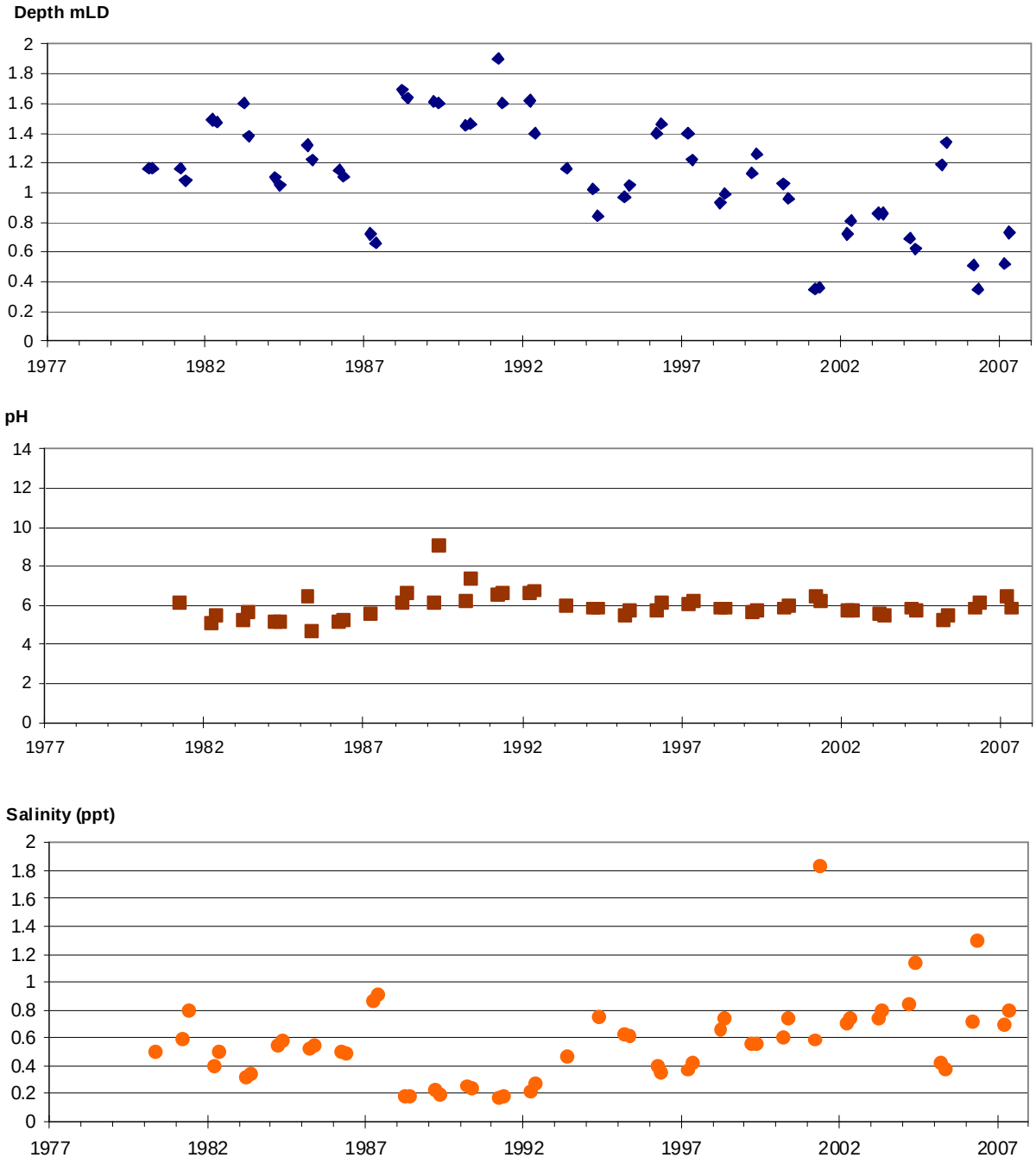




Guraga Lake is listed in the 'Directory of Important Wetlands in Australia'.

Guraga is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

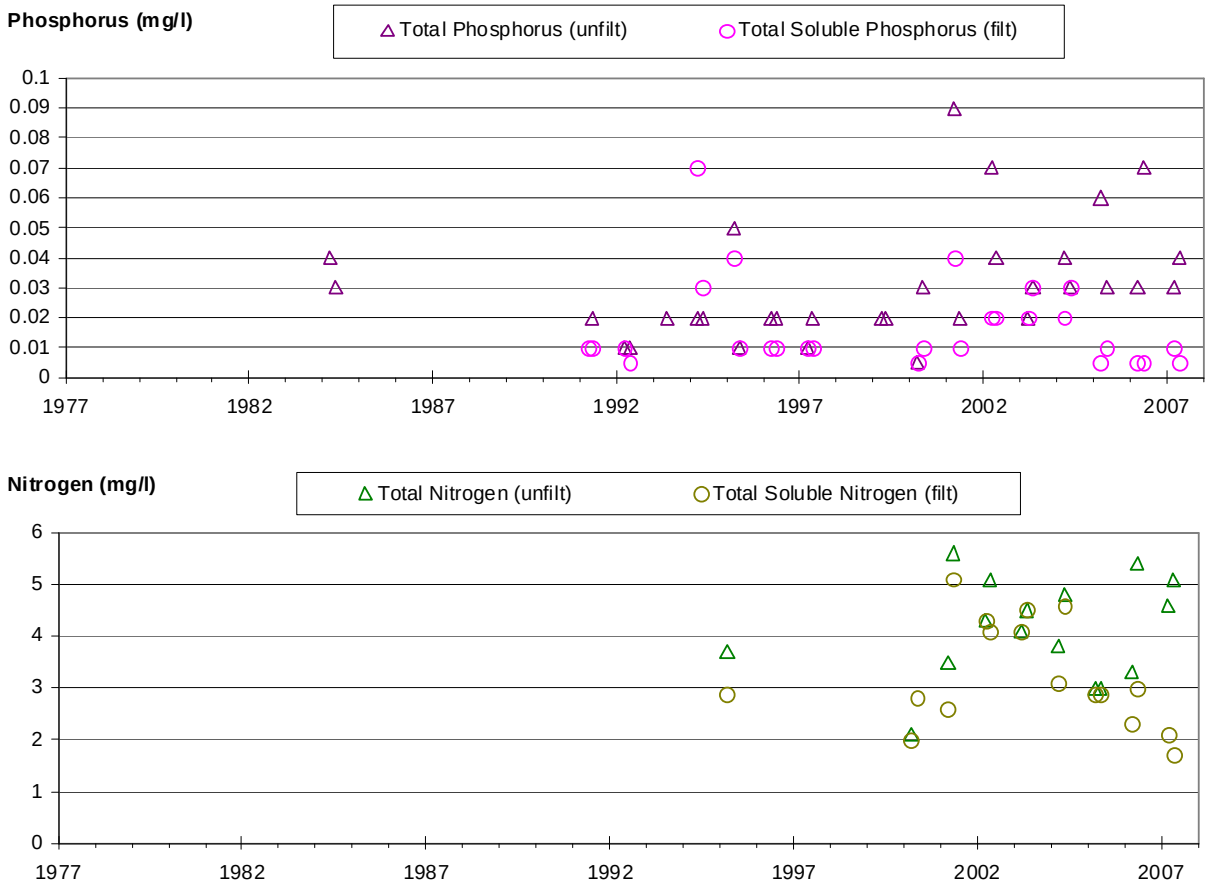
HARVEY 12632 (C)



Notes:

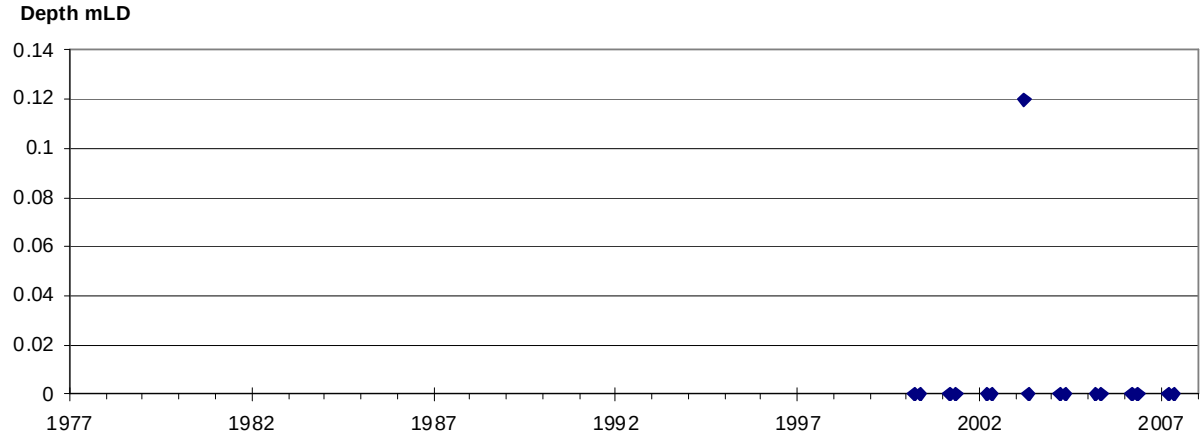
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

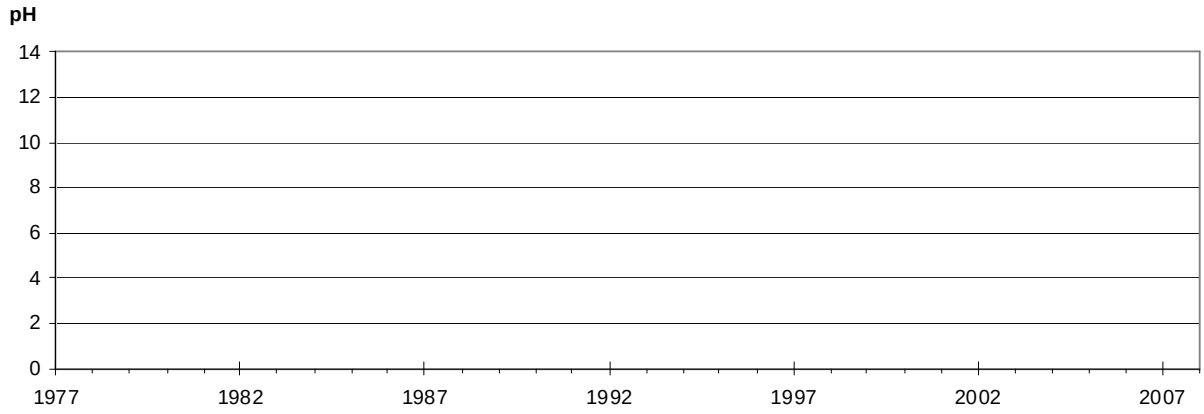
HARVEY 12632

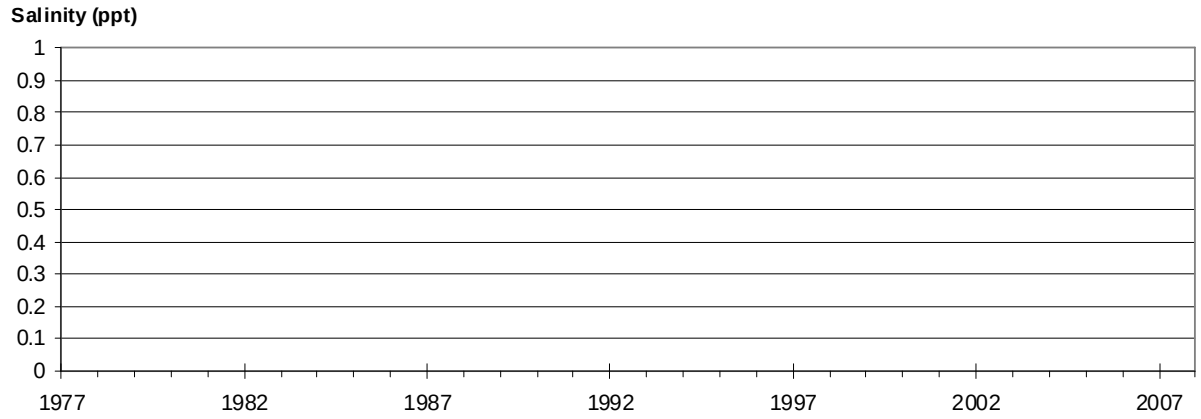


Harvey 12632 is in the Wellington District (headquartered in Collie) of the South West DEC Region.

HEBITONS (C)

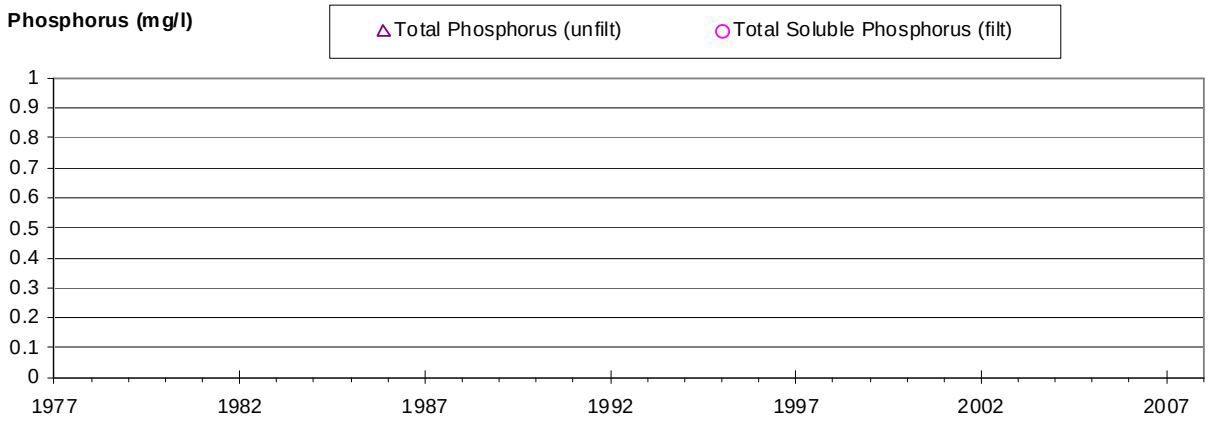


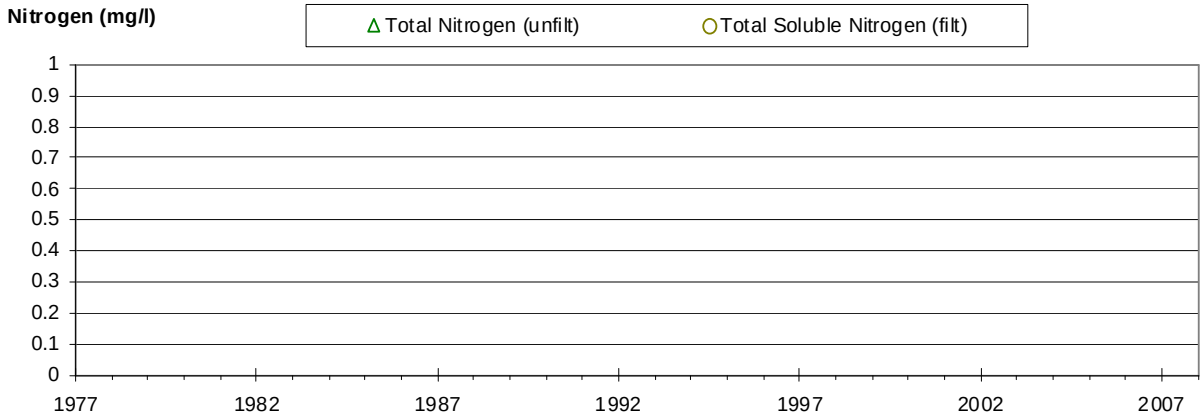




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

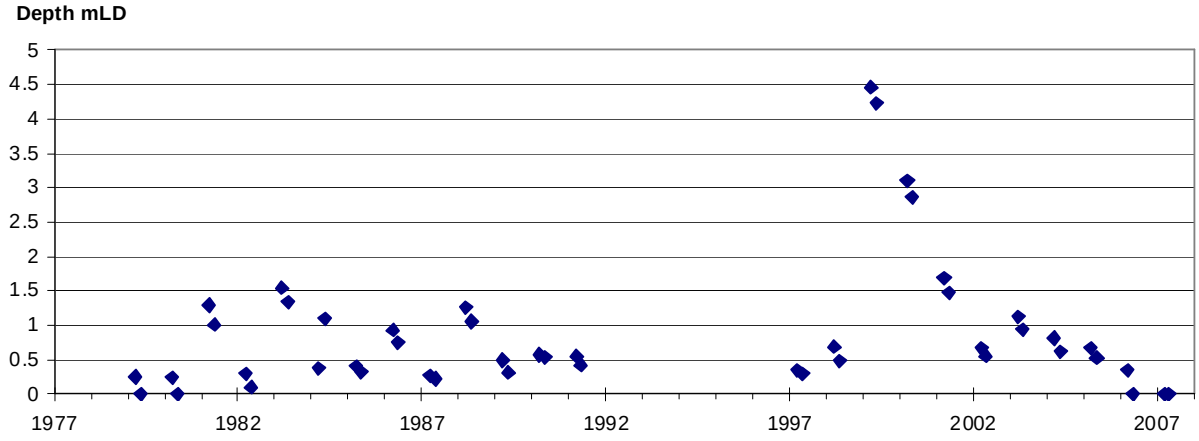
HEBITONS

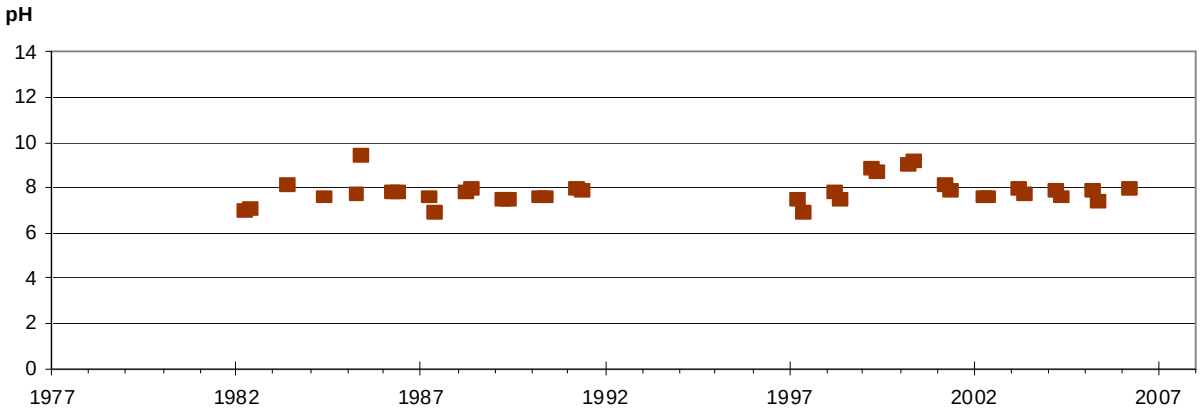


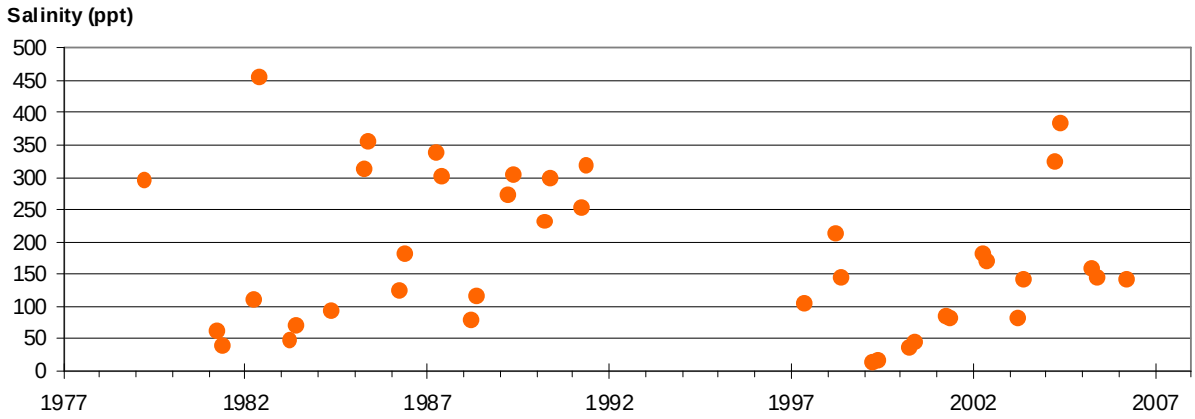


Hebitons is in the Geraldton District of the Midwest DEC Region

HINDS (C)

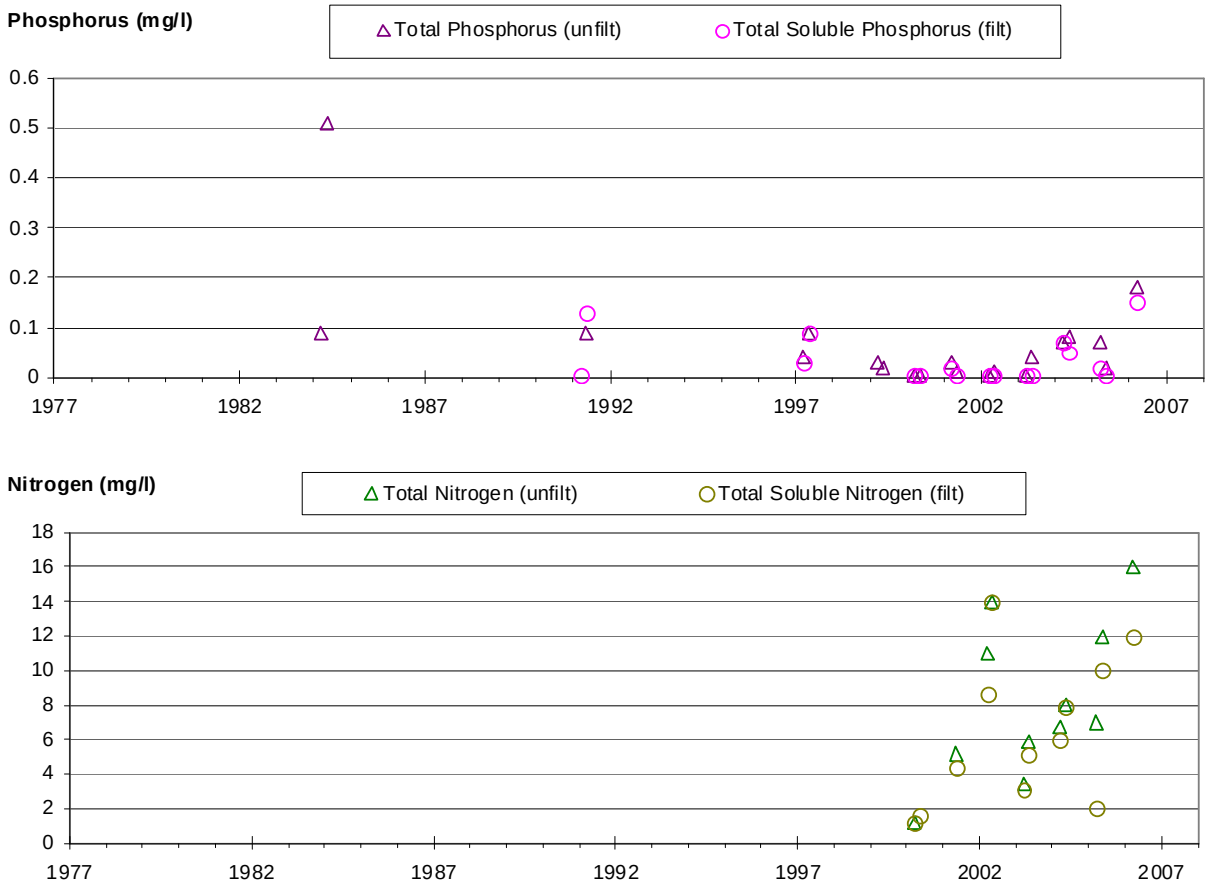






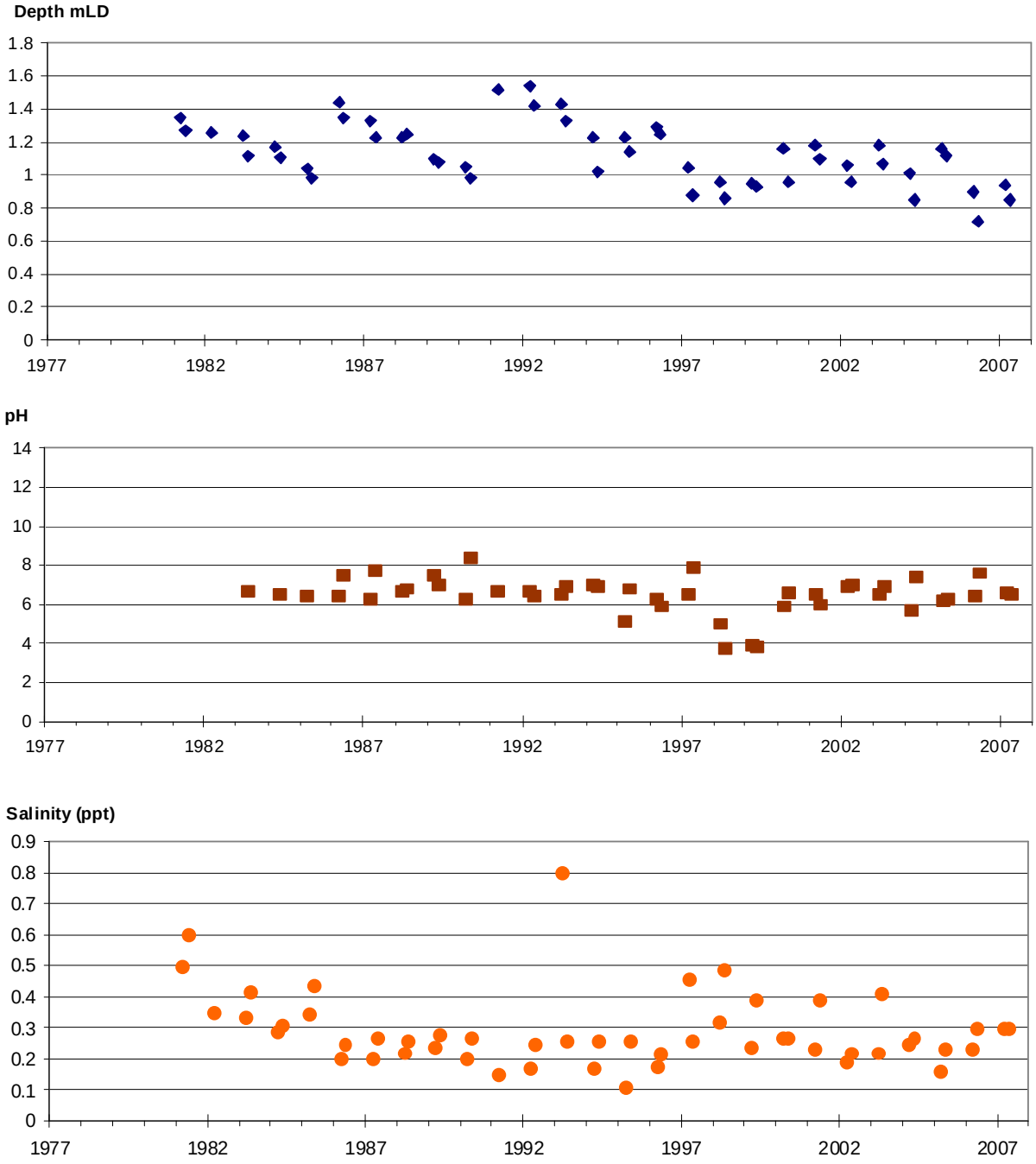
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

HINDS



Hinds is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

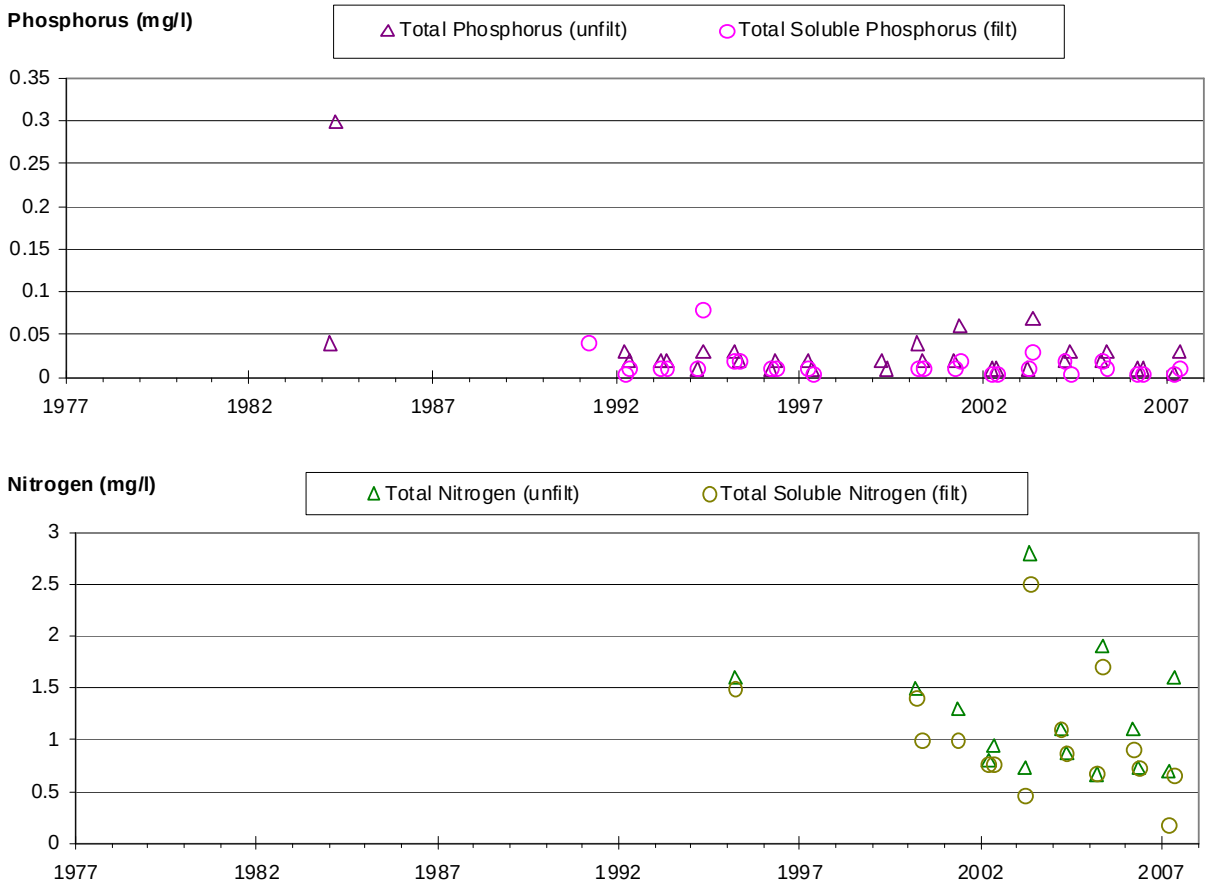
JANDABUP (C)



Notes:

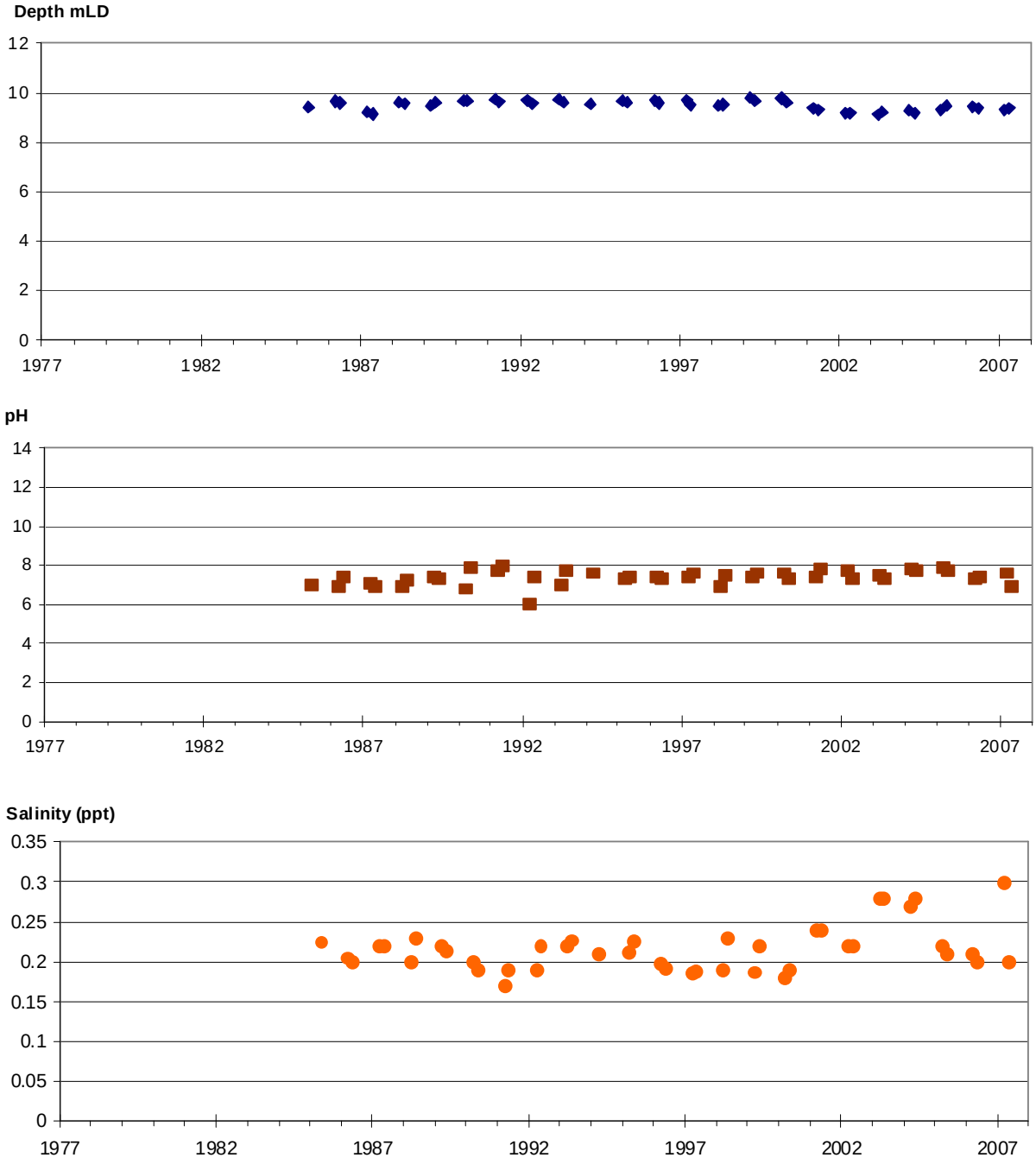
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

JANDABUP



Jandabup is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

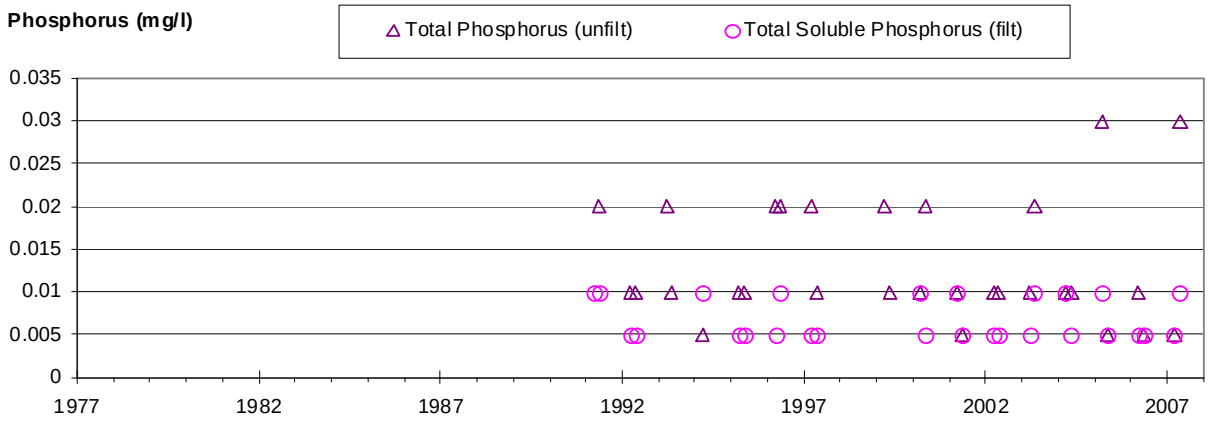
JASPER (C)

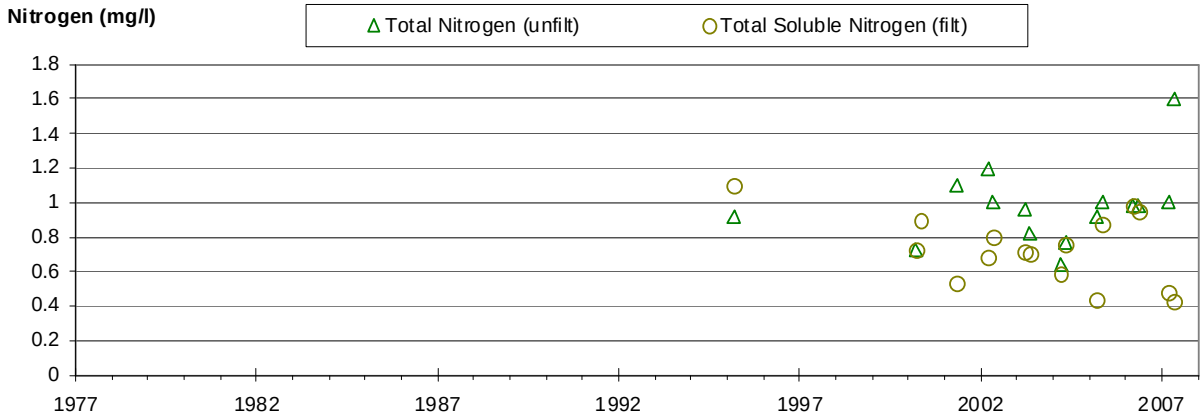


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

JASPER

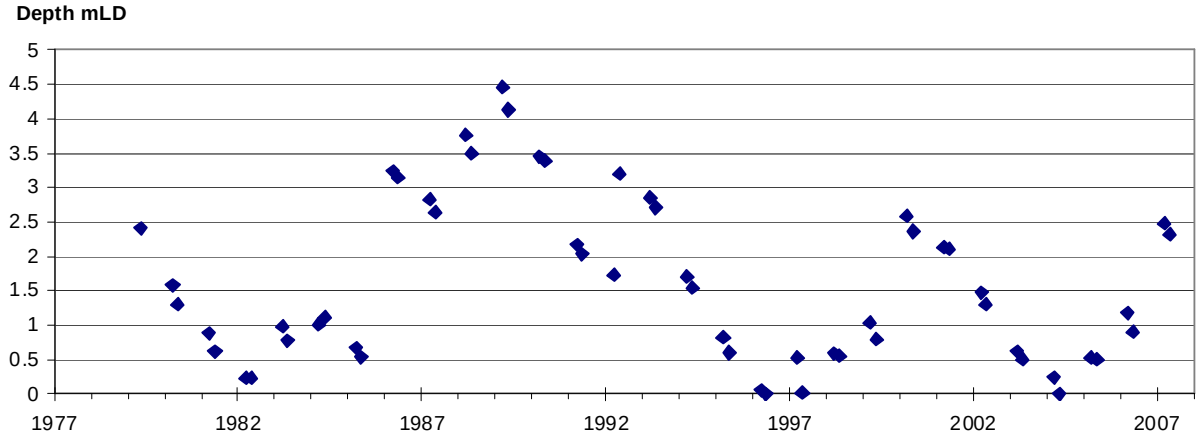


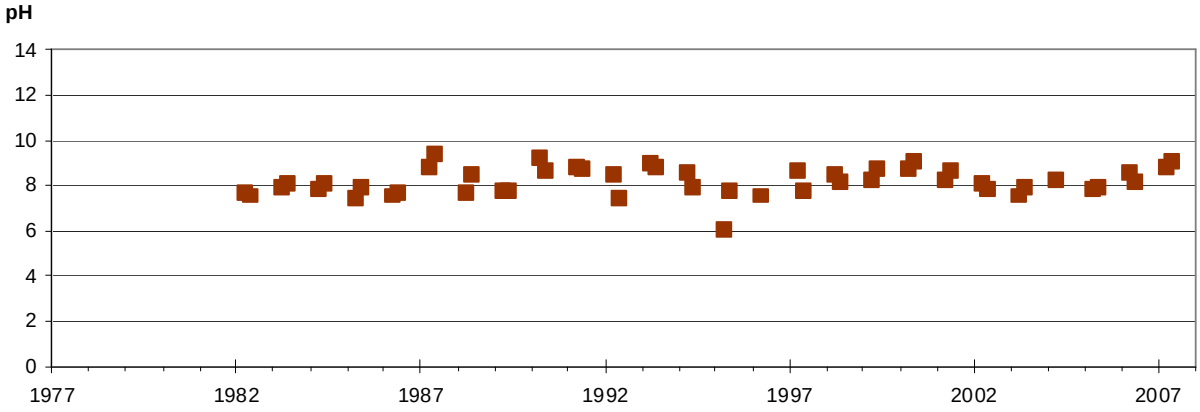


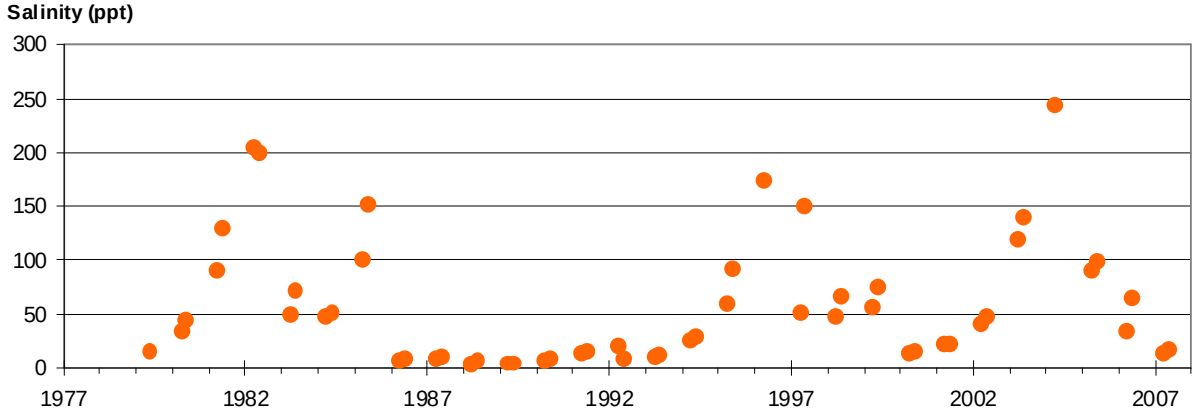
Jasper is a component of the 'Gingilup-Jasper Wetland System', which is listed in the 'Directory of Important Wetlands in Australia'.

Jasper is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

JERDACUTTUP (C)







Notes:
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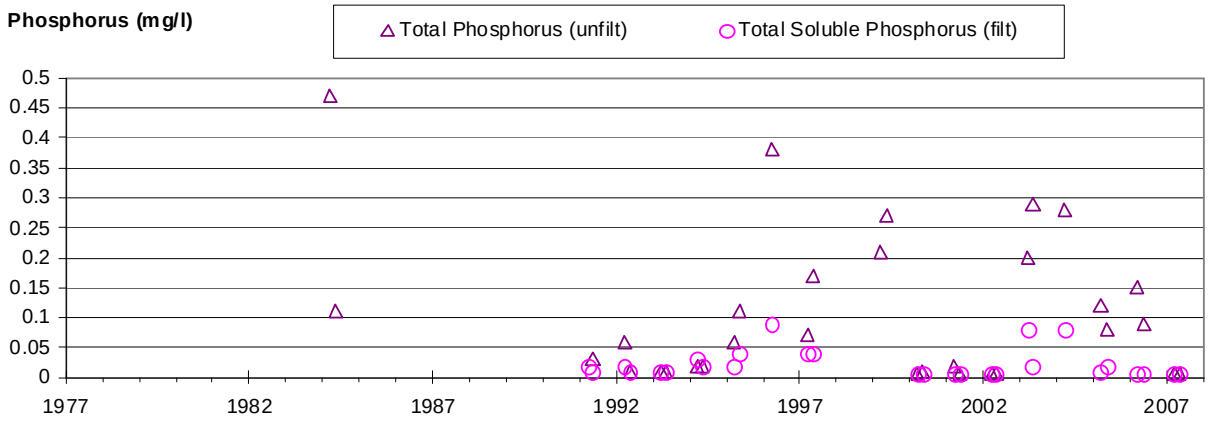
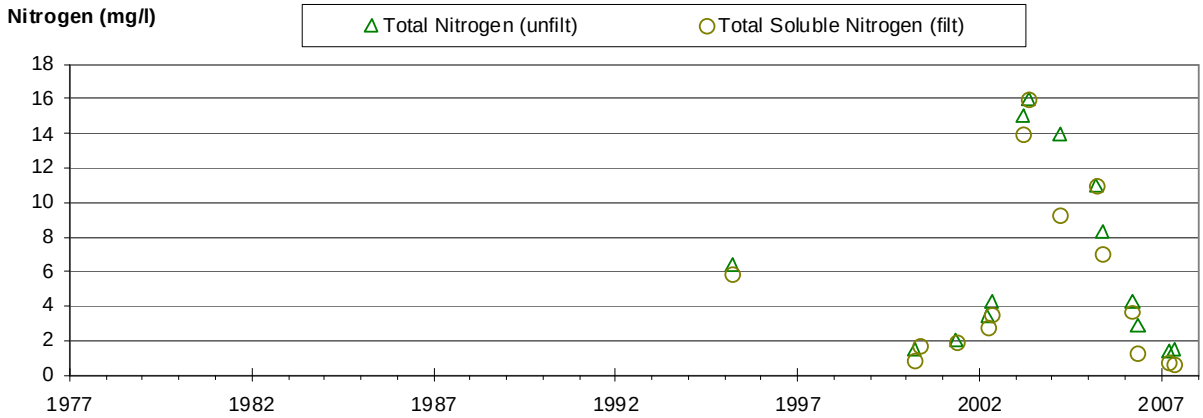
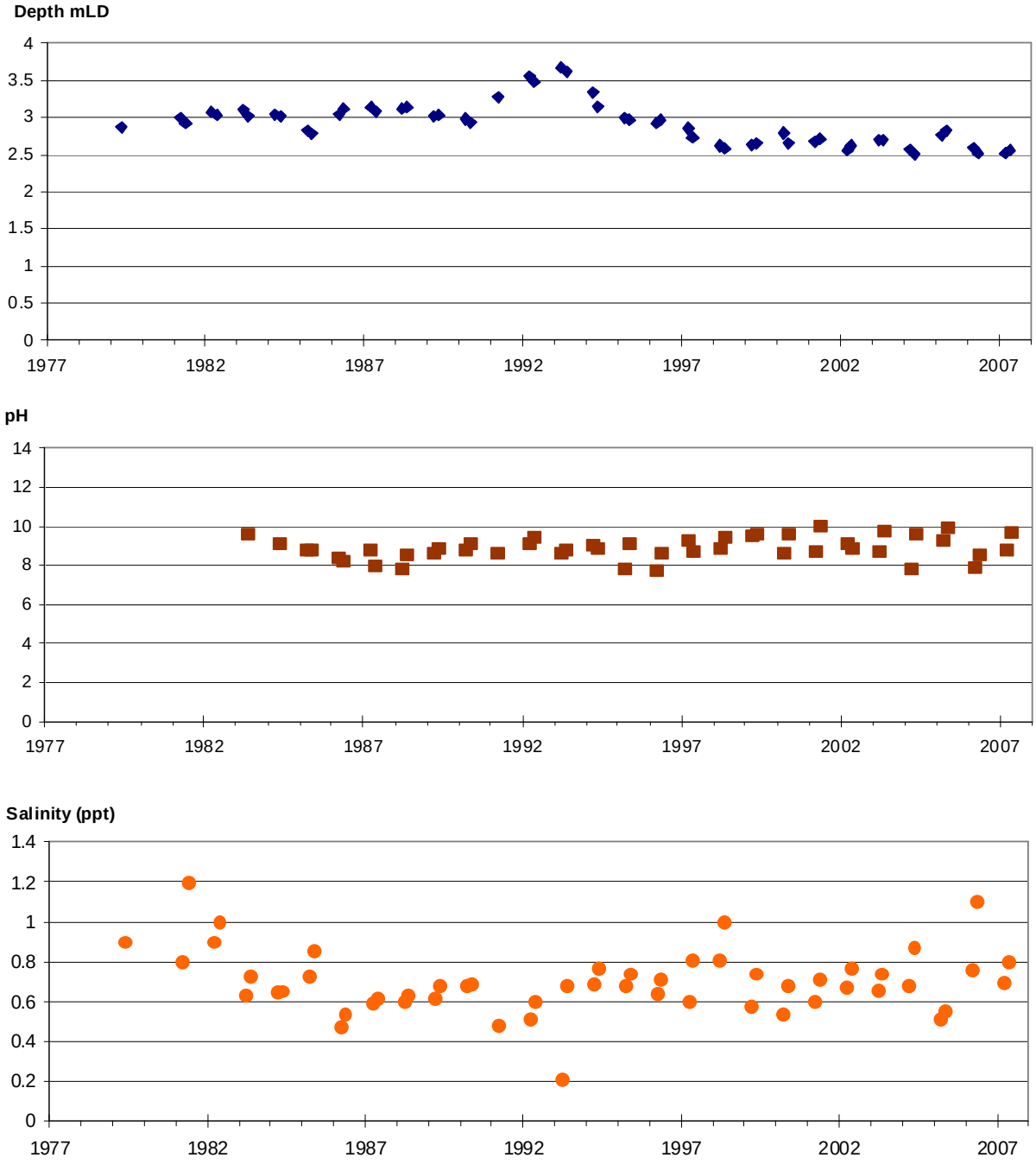
JERDACUTTUP





Jerdacuttup is in the Albany District of the South Coast DEC Region

JOONDALUP (C)



Notes:

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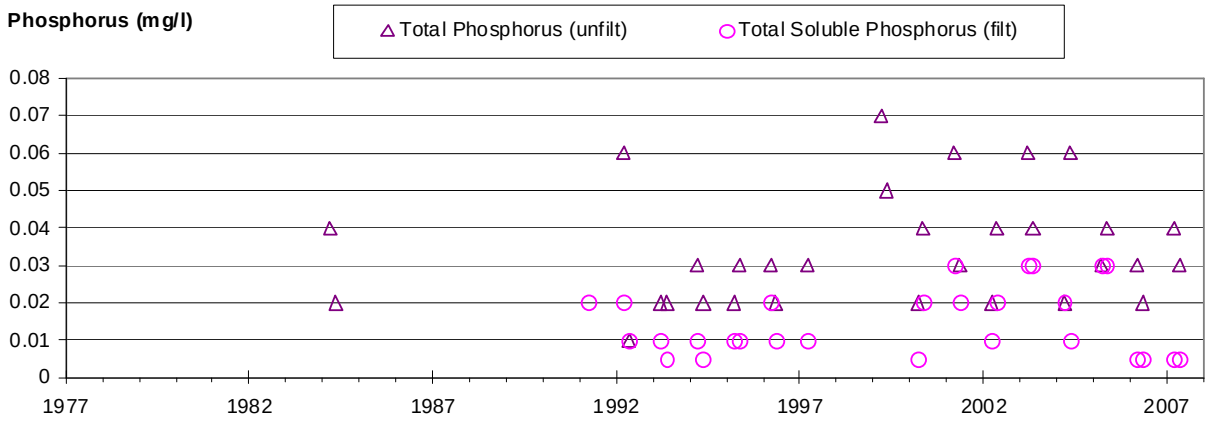
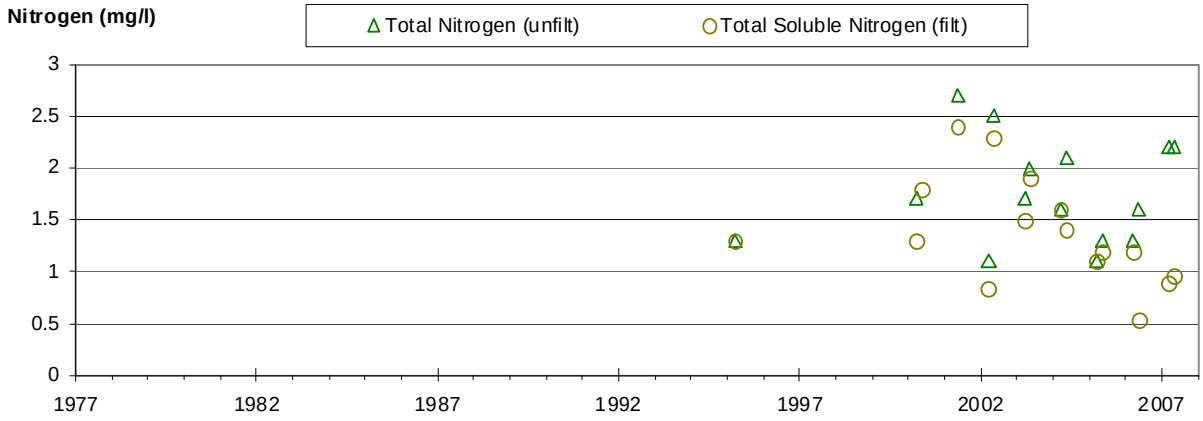
JOONDALUP

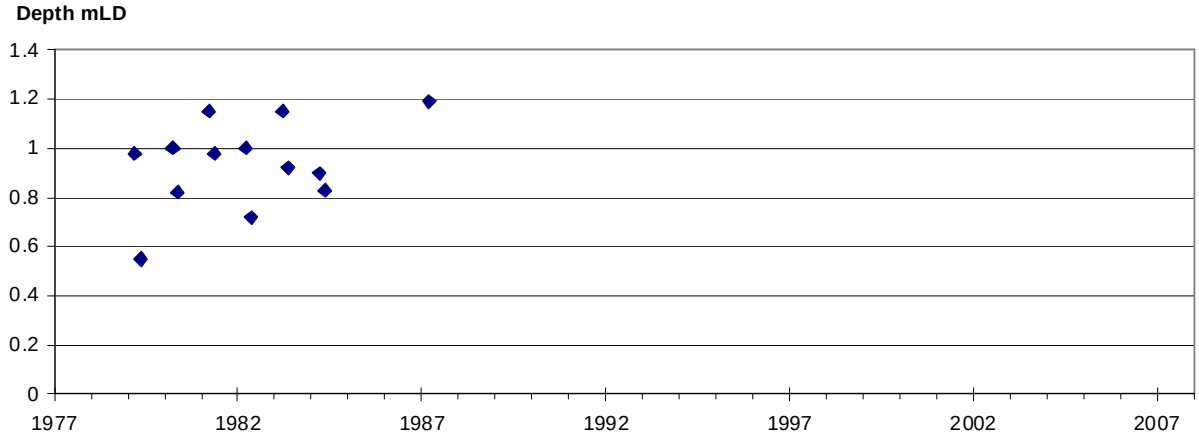


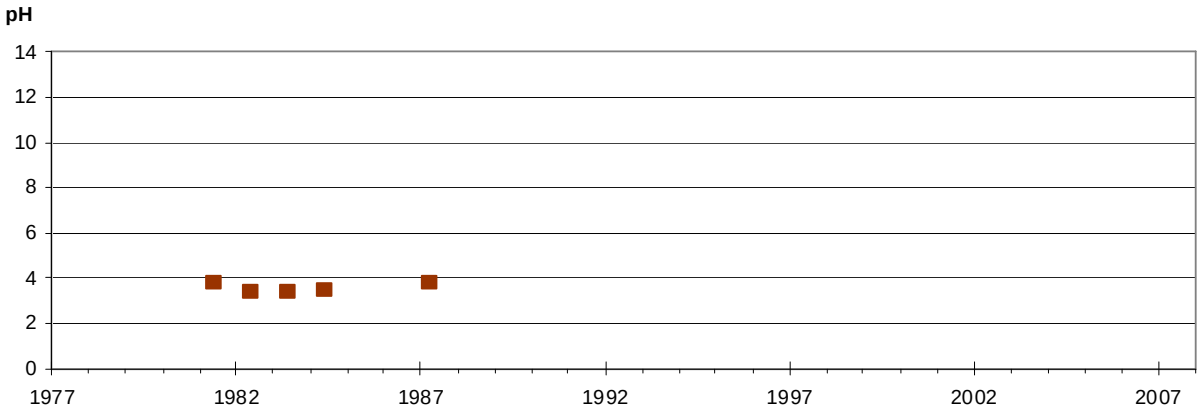


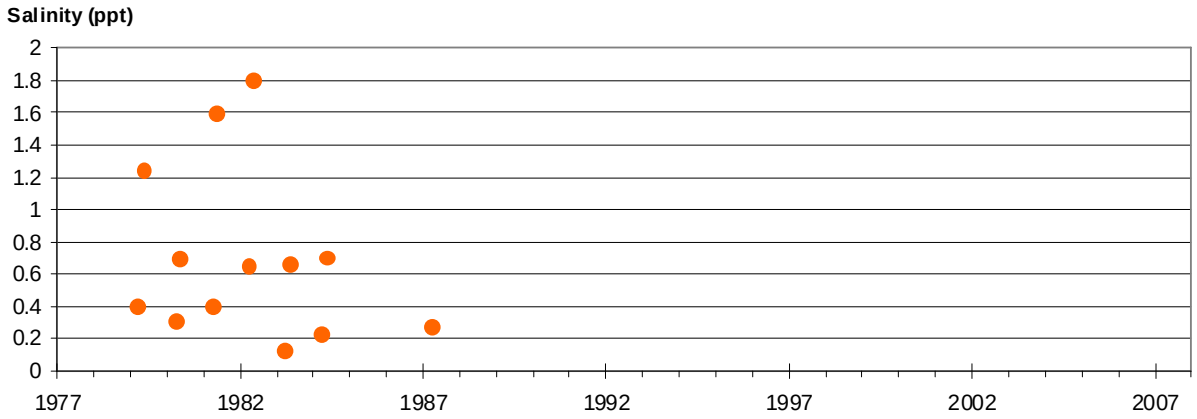
Joondalup Lake is listed in the 'Directory of Important Wetlands in Australia'.

Joondalup is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

KARAKIN (H)







Notes:
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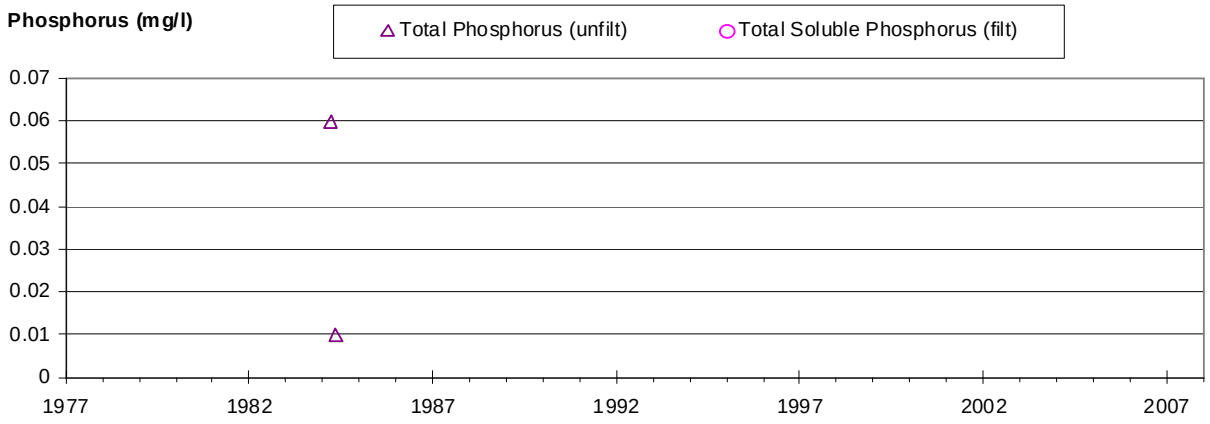
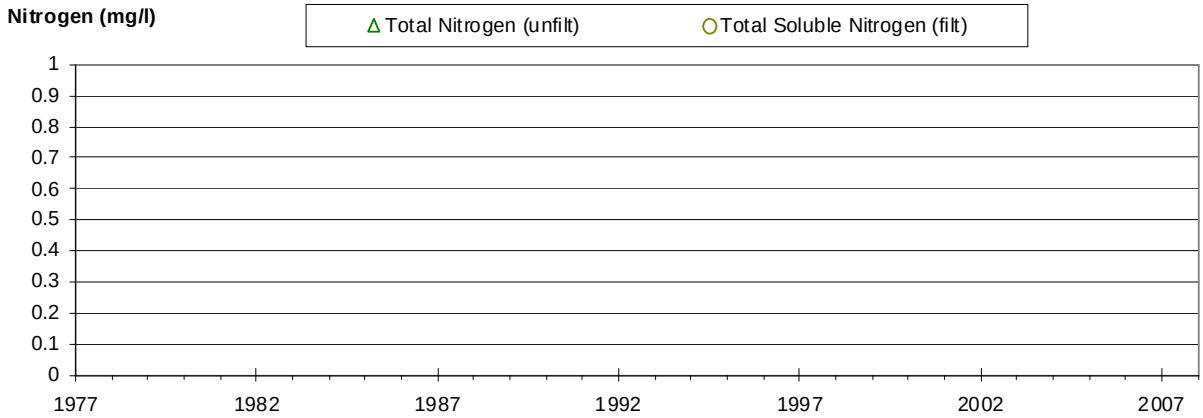
KARAKIN

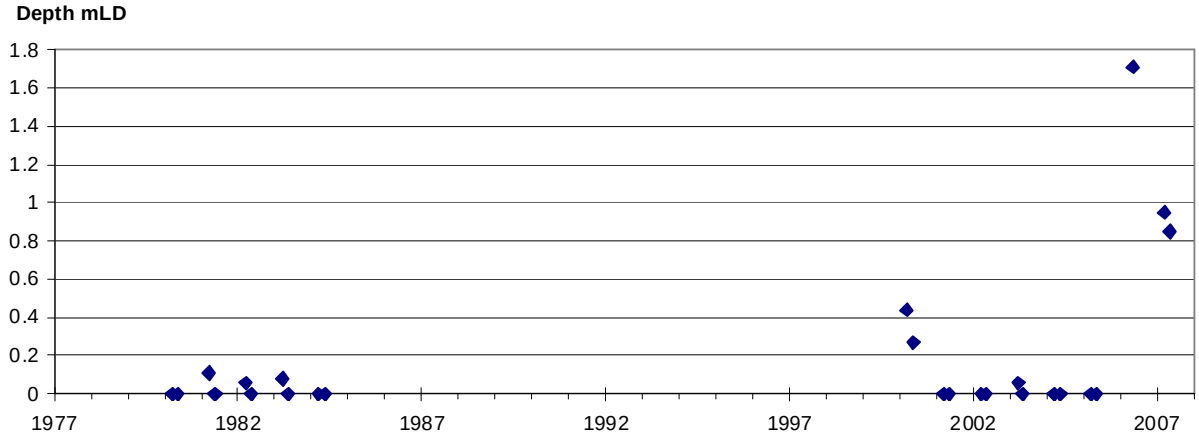


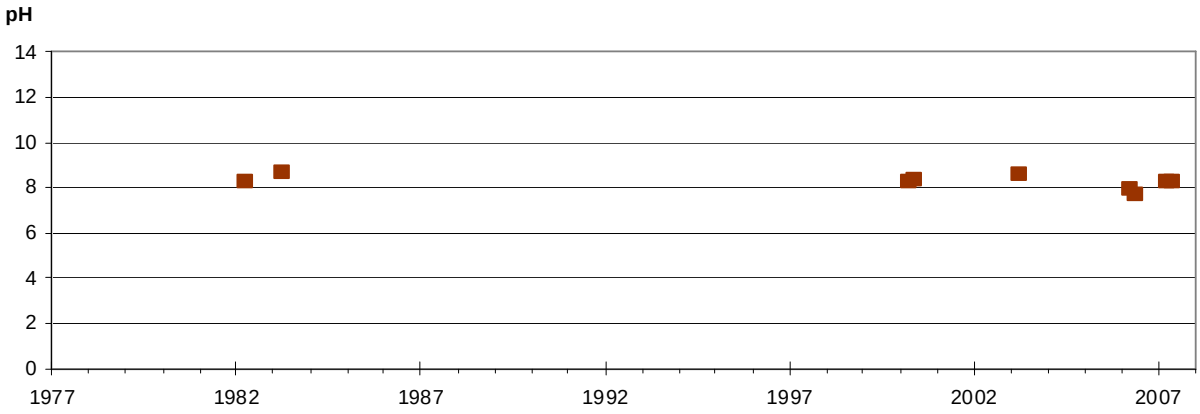


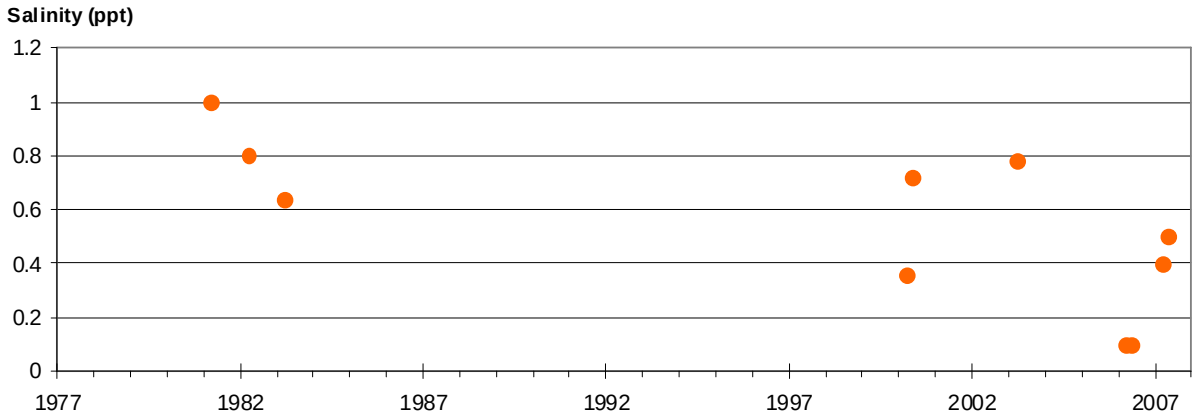
Karakin is a component of 'Karakin Lakes', which is listed in the 'Directory of Important Wetlands in Australia'.

Karakin is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

KENT 29020 (C)







Notes:
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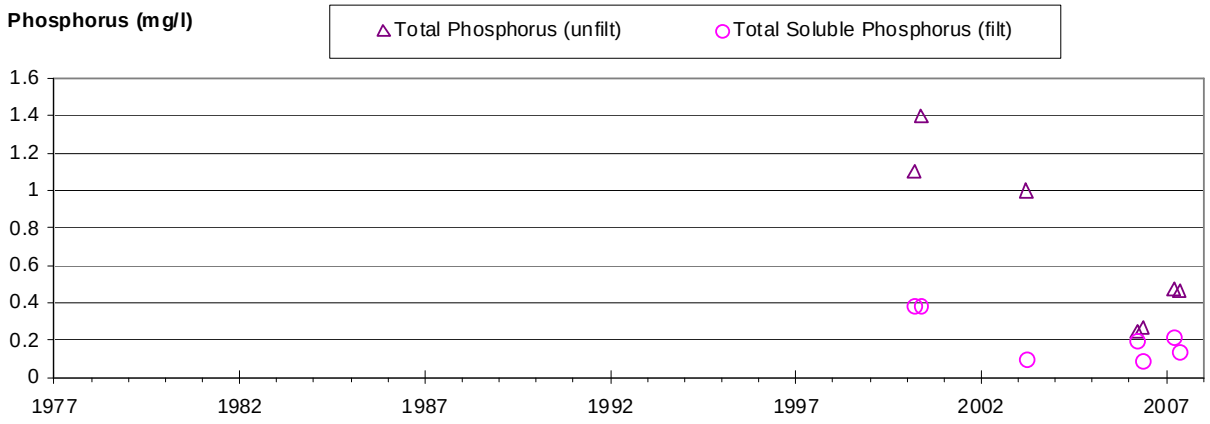
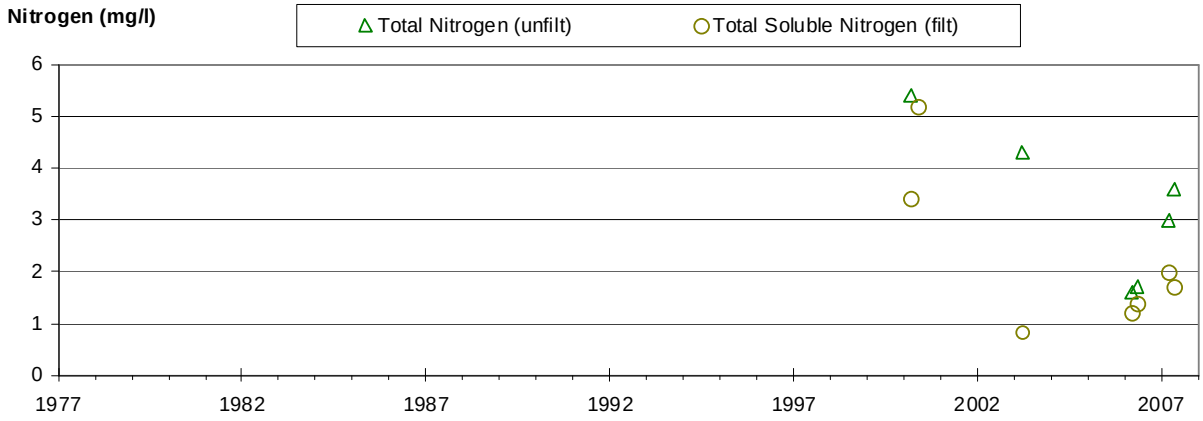
KENT 29020



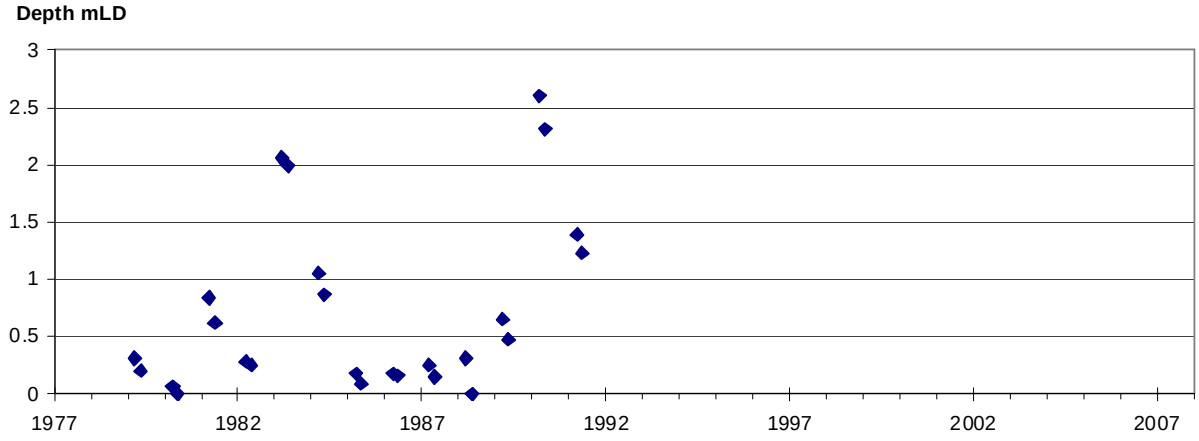


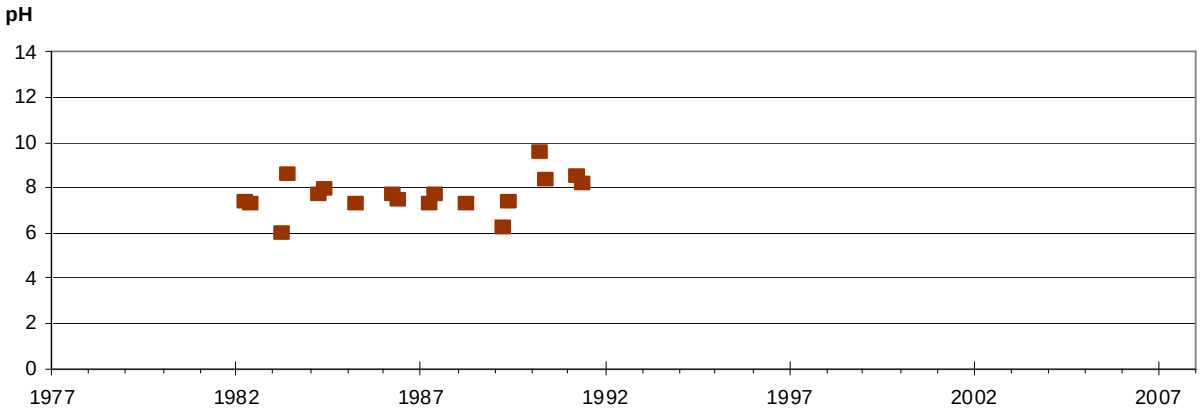
Kent 29020 (also known as East Lake Bryde) is a component of the 'Lake Bryde – East Lake Bryde System', which is listed in the 'Directory of Important Wetlands in Australia'.

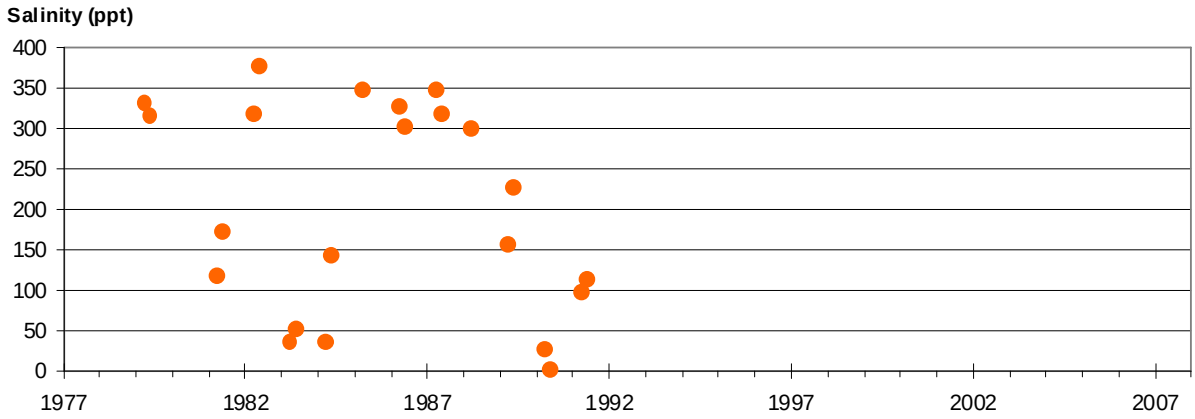
Kent 29020 is within the Lake Bryde Natural Diversity Recovery Catchment.

Kent 29020 is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

KONDININ (H)







Notes:
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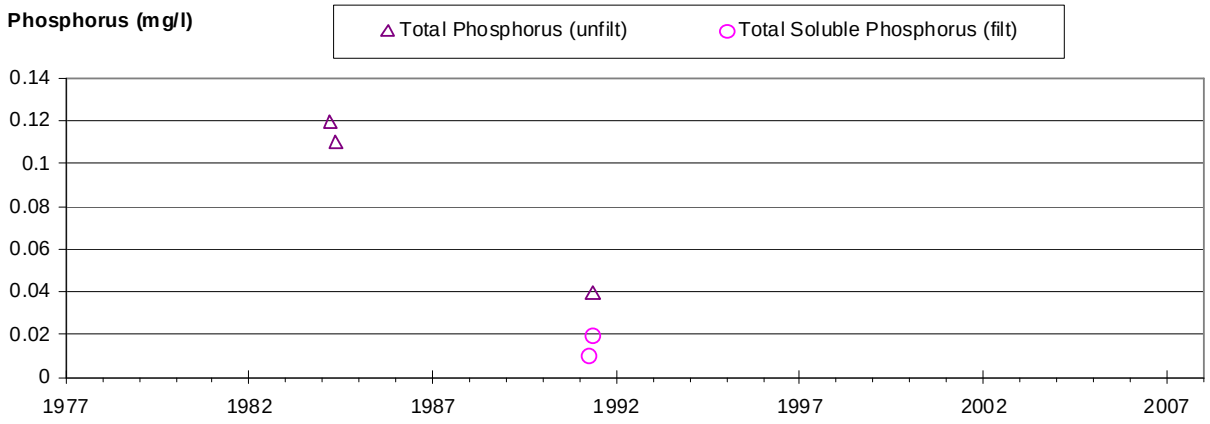
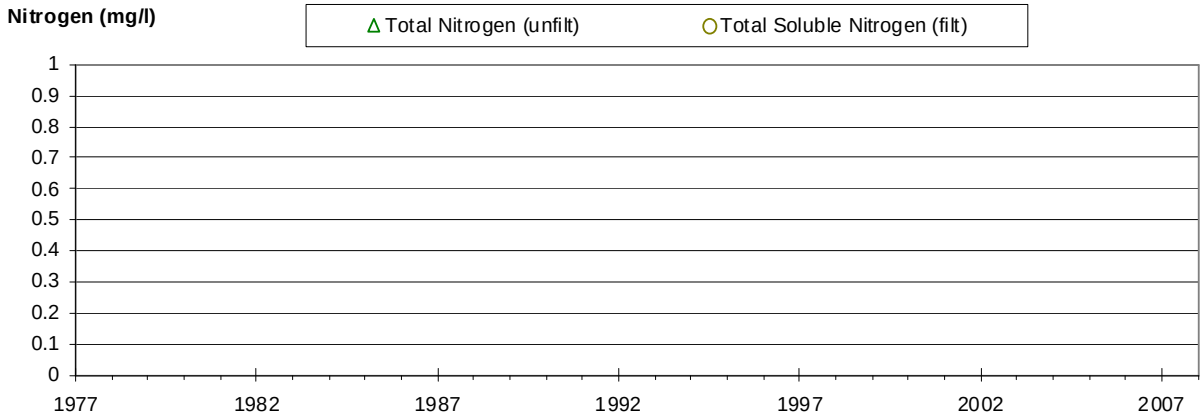
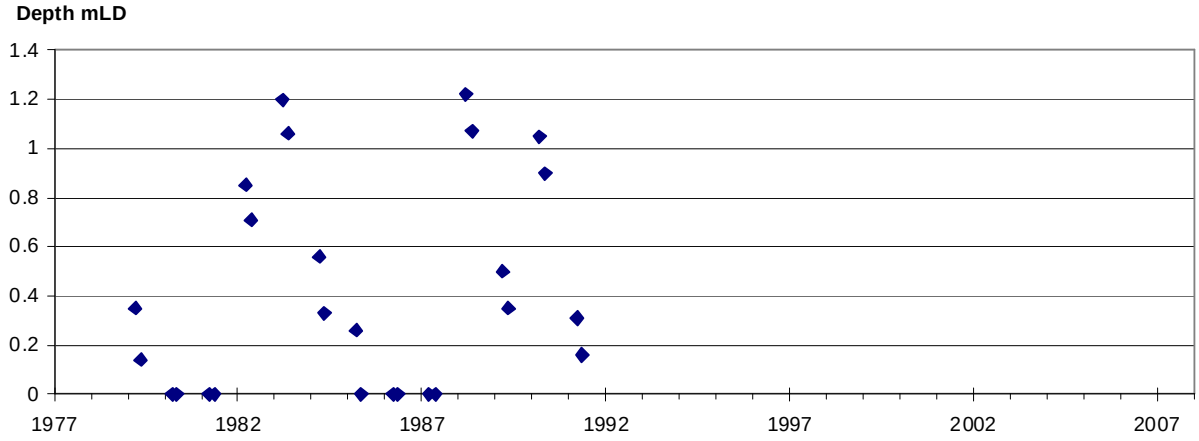
KONDININ

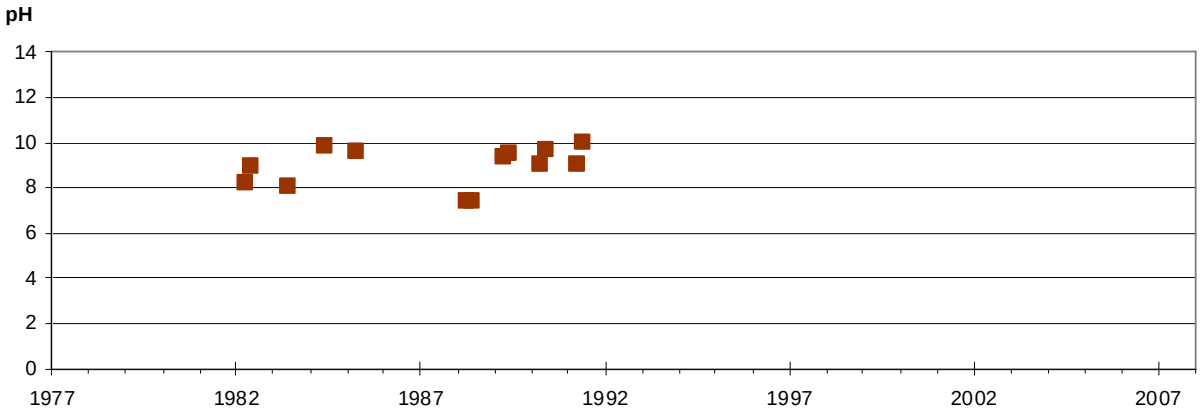


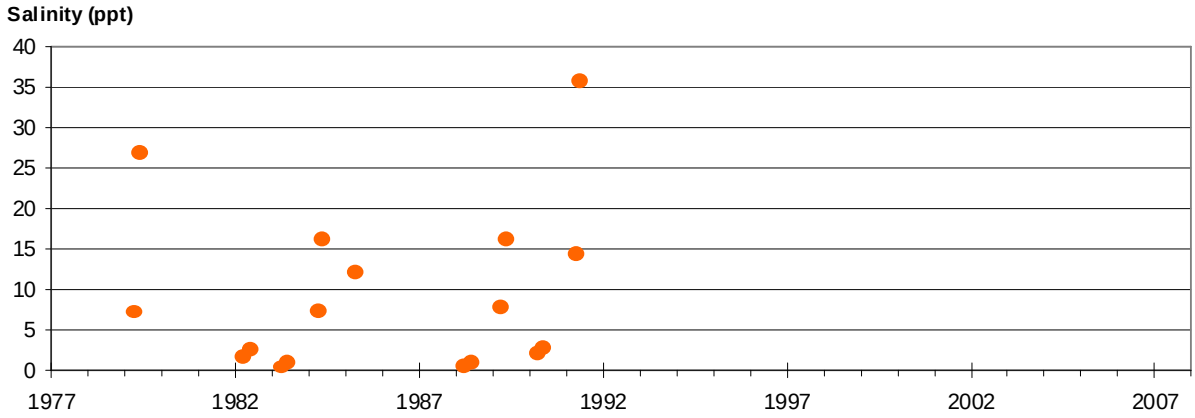


Kondinin is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

KWOBRUP (H)







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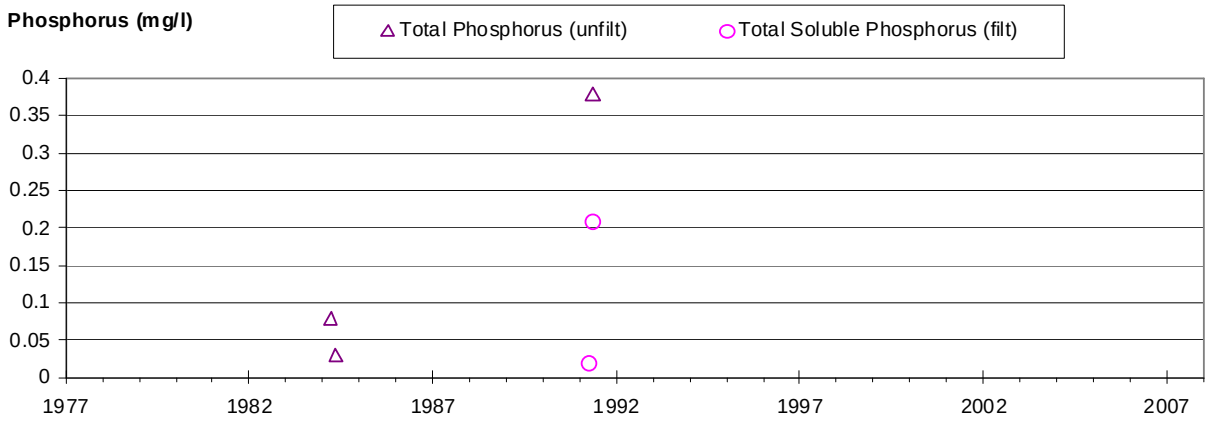
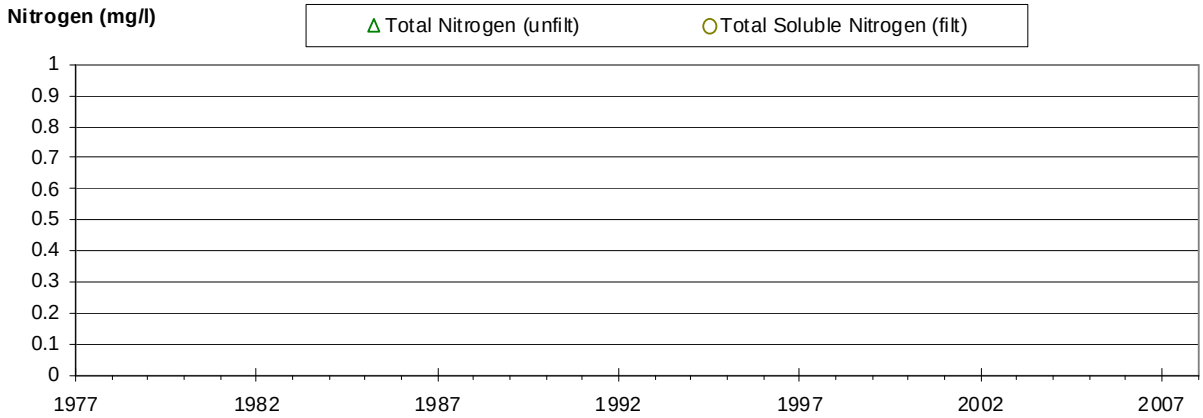
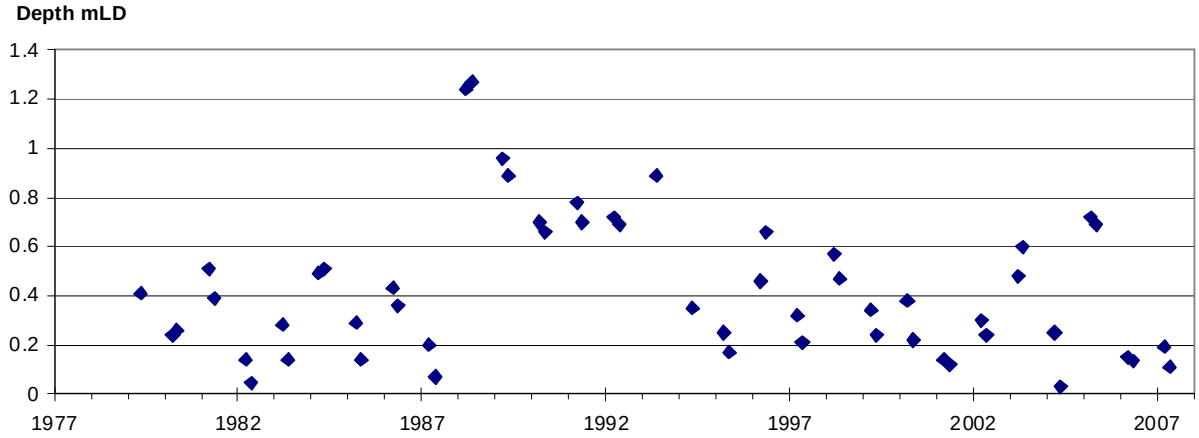
KWOBRUP

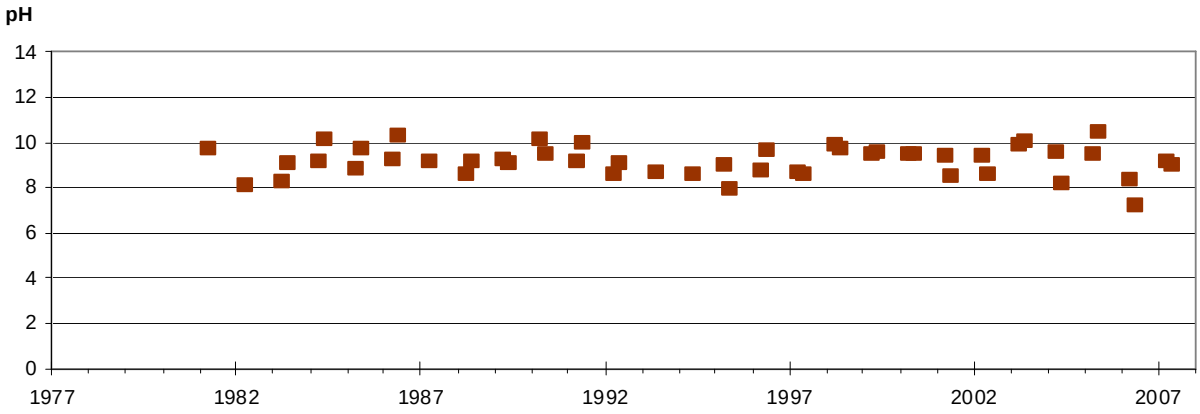


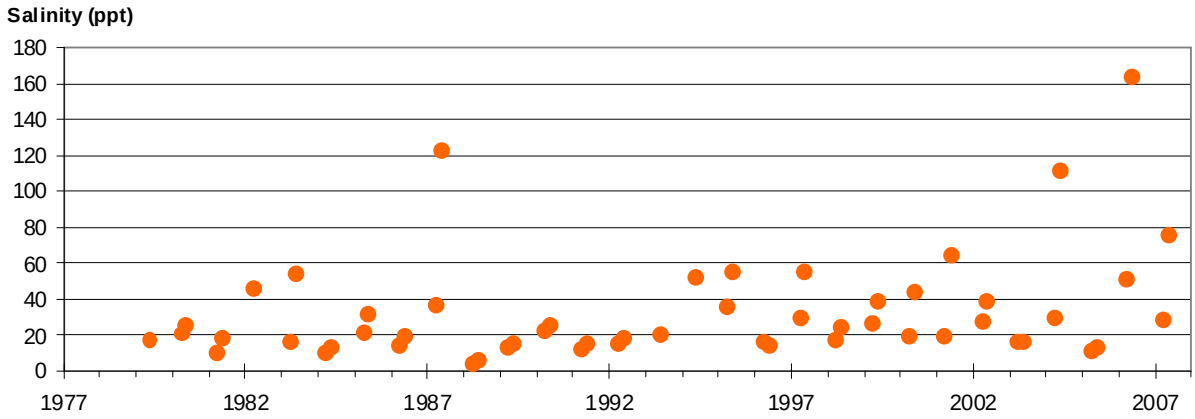


Kwobrup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

KWORNICUP (C)

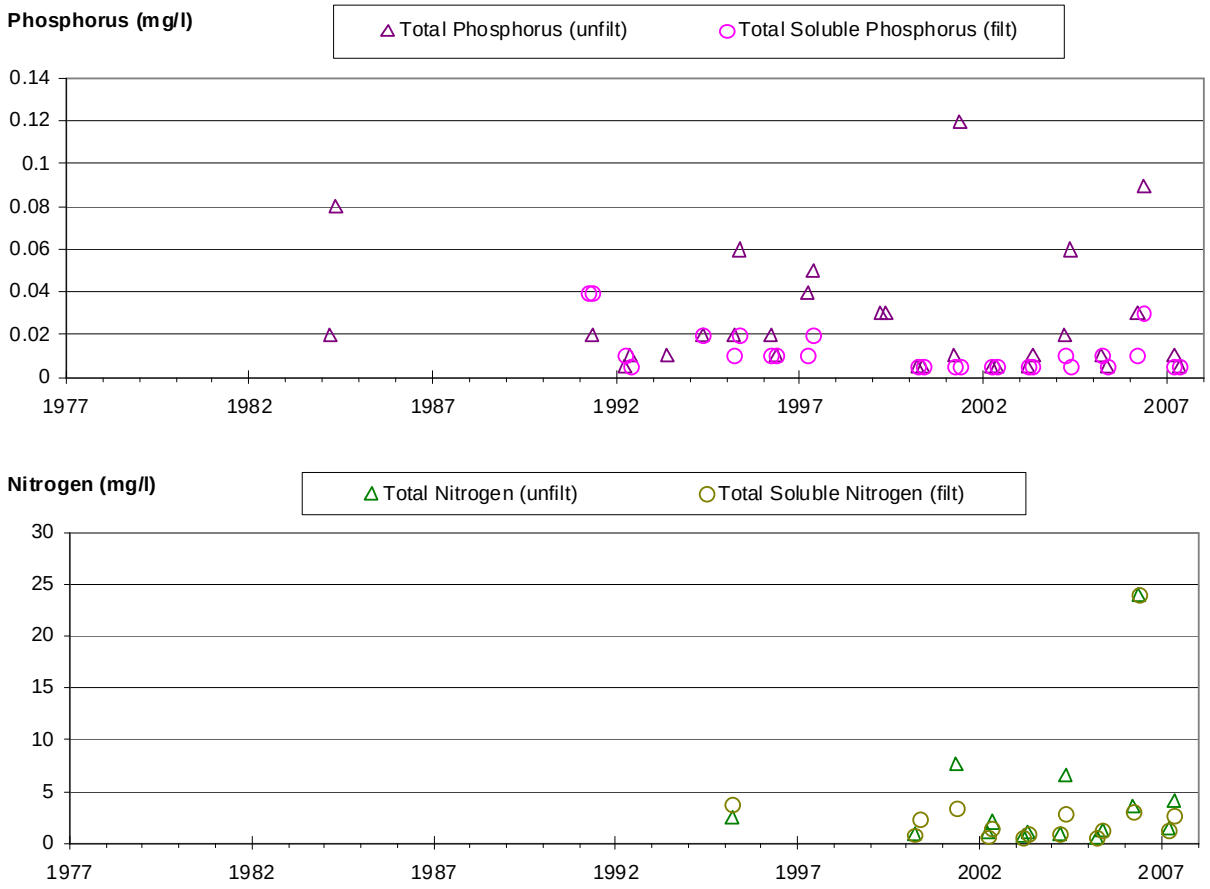






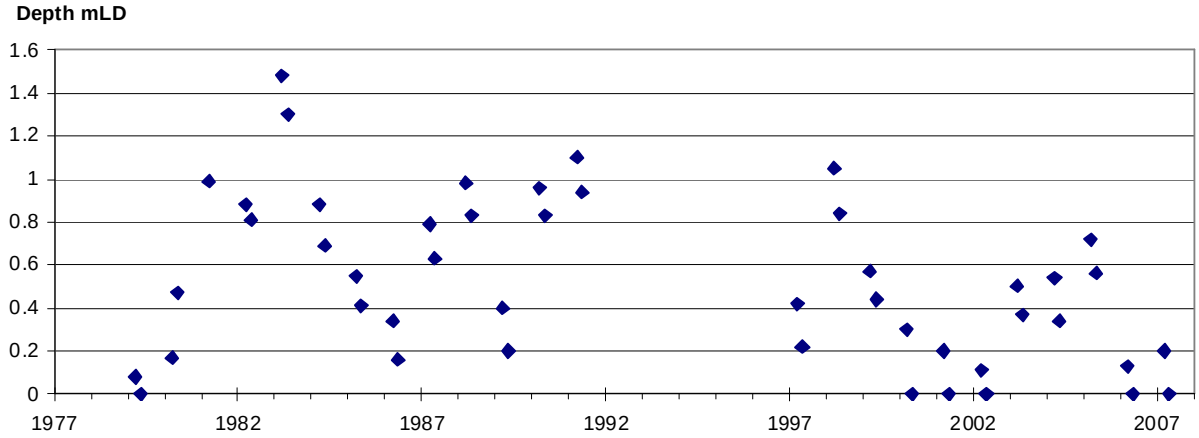
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

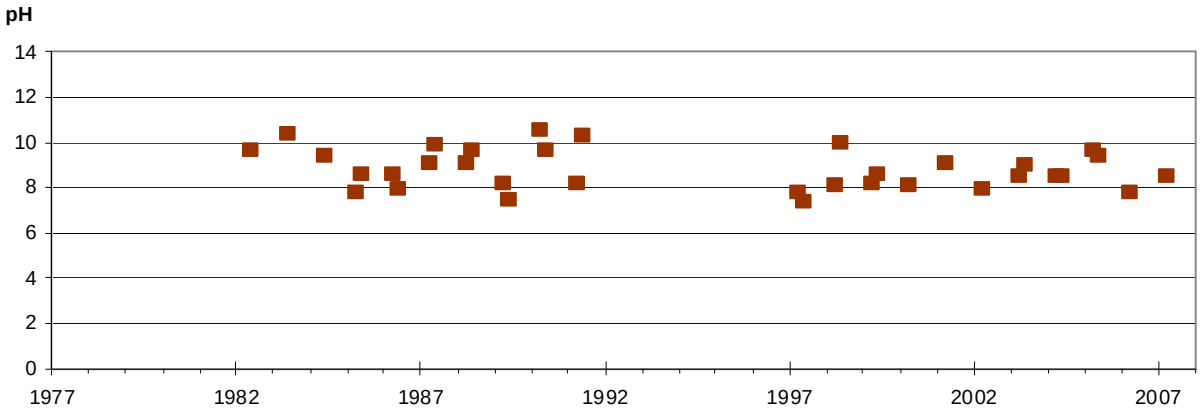
KWORNICUP

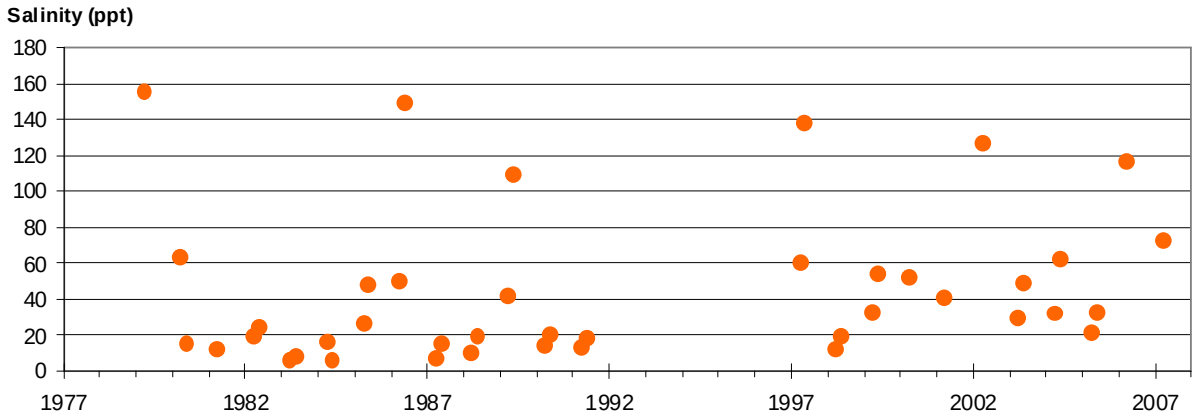


Kwornicup is in the Frankland District (headquartered in Walpole) of the Warren DEC Region.

LITTLE WHITE (C)

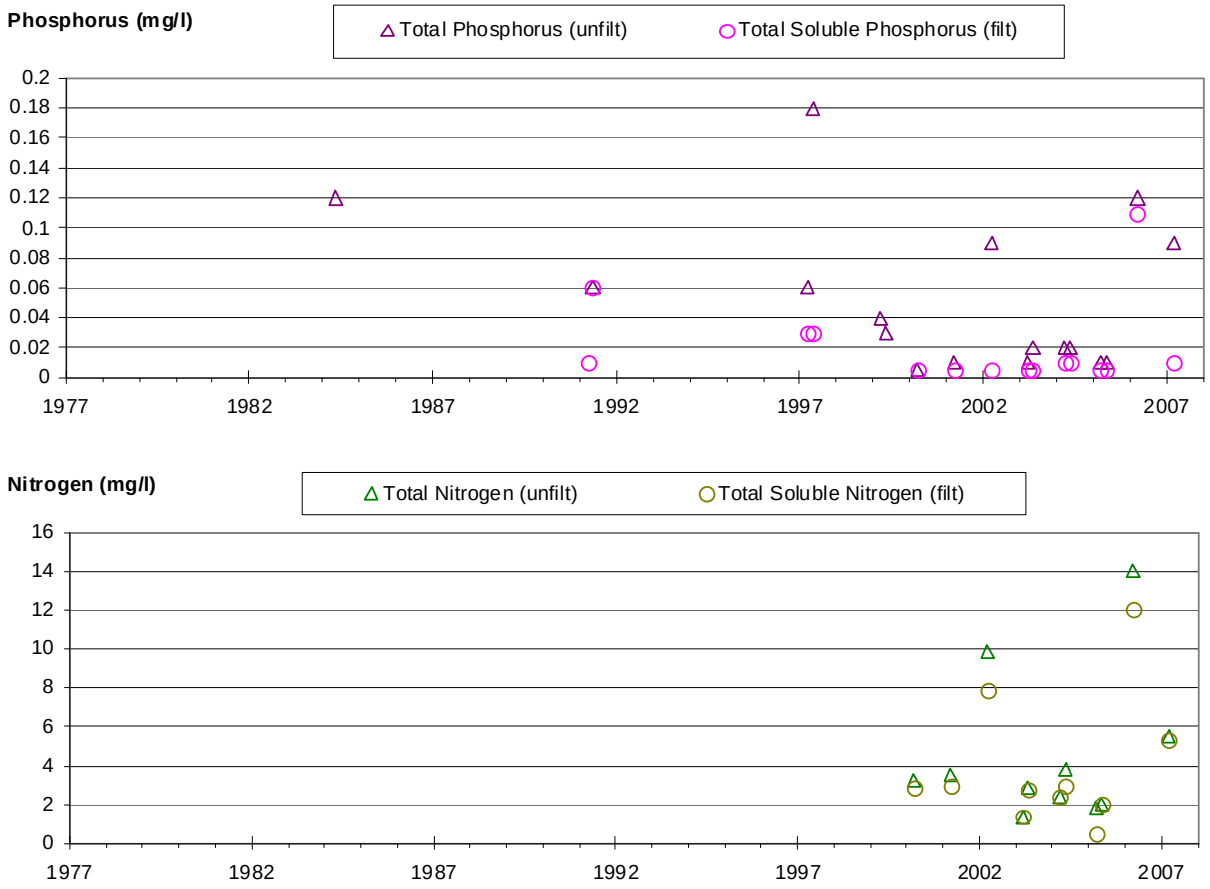






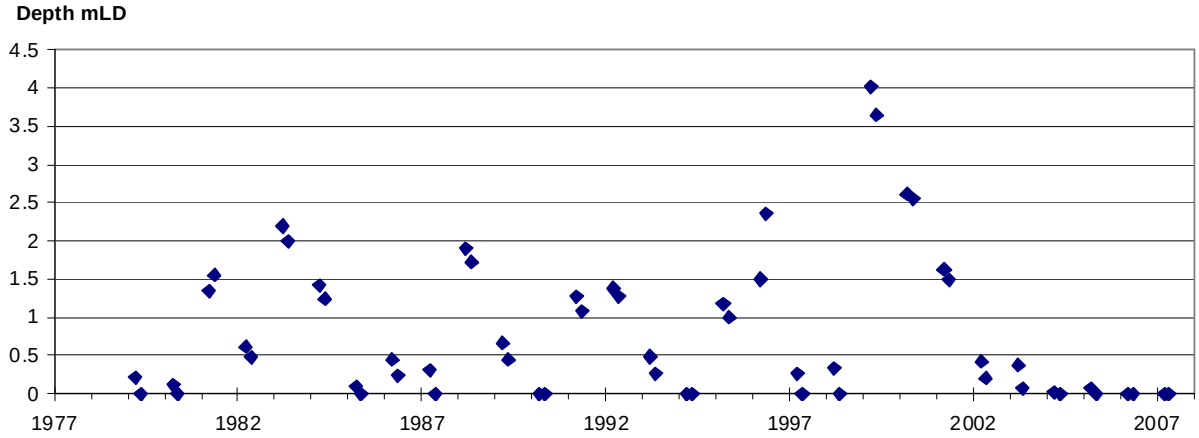
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

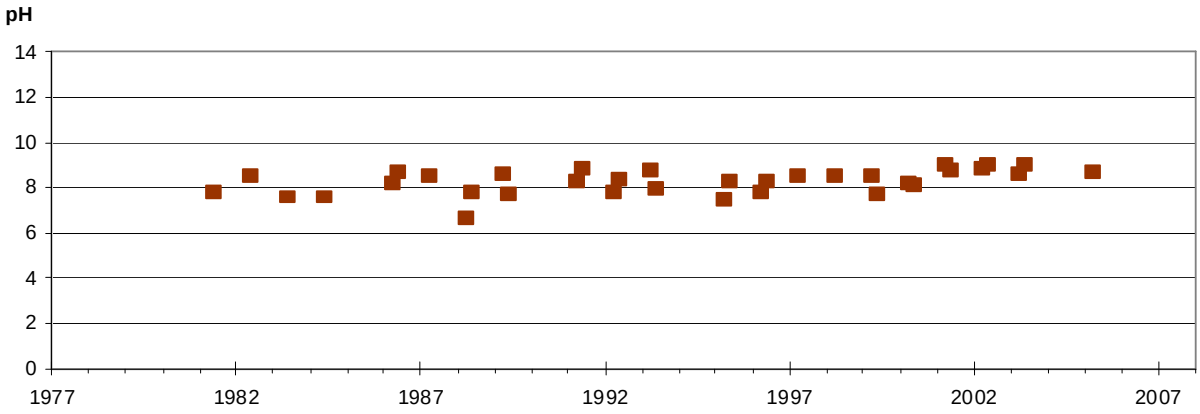
LITTLE WHITE

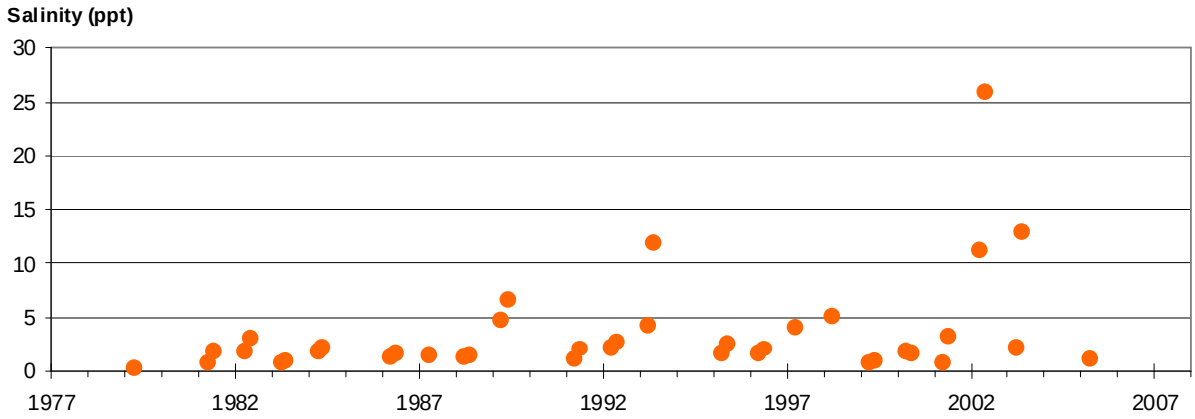


Little White is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

LOGUE (C, IM)







Notes:
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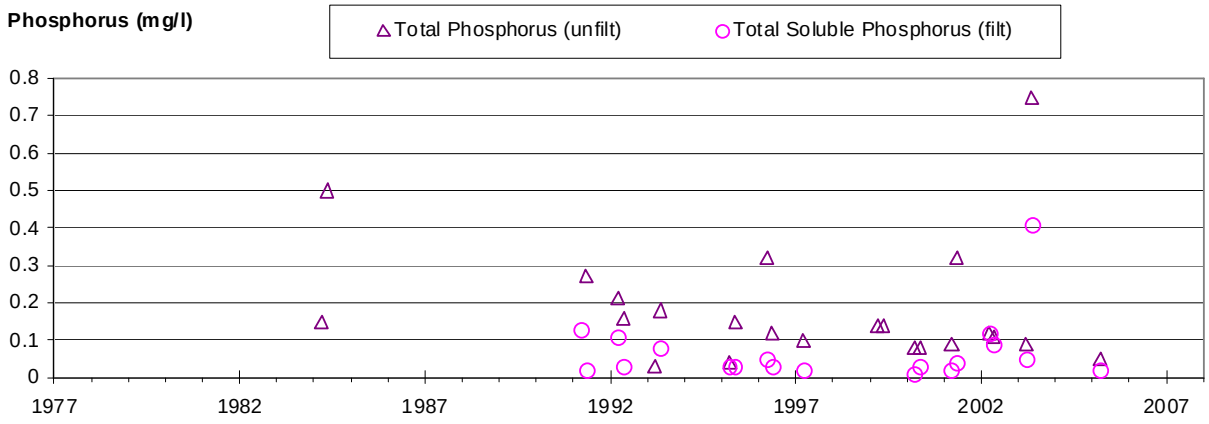
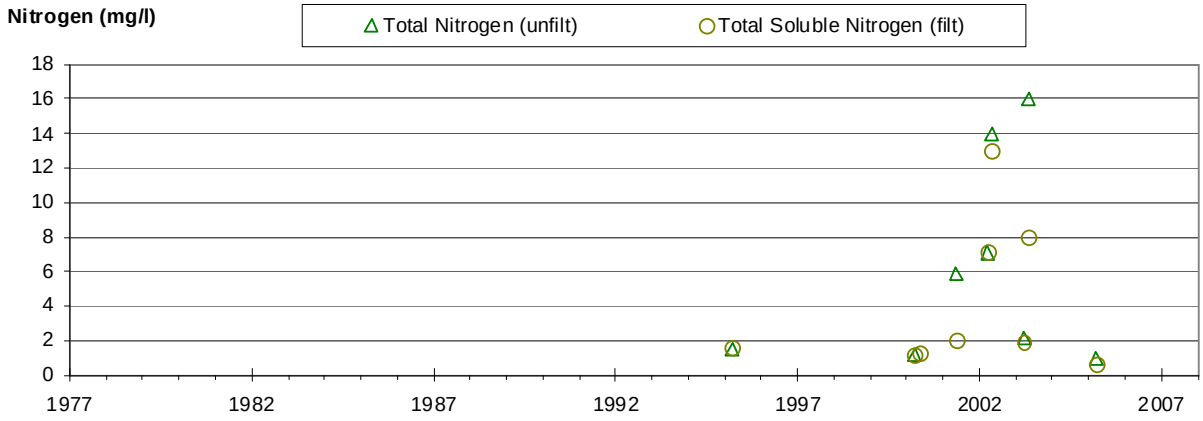
LOGUE

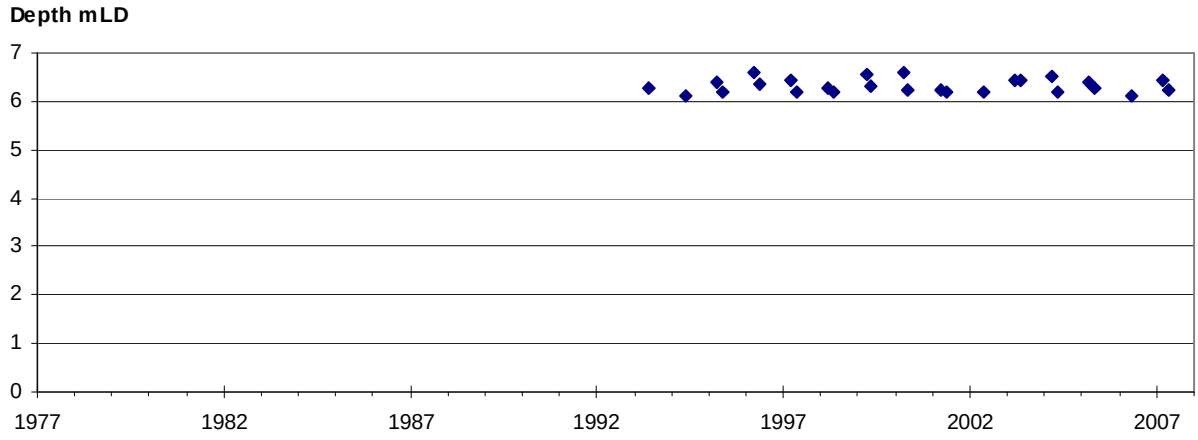


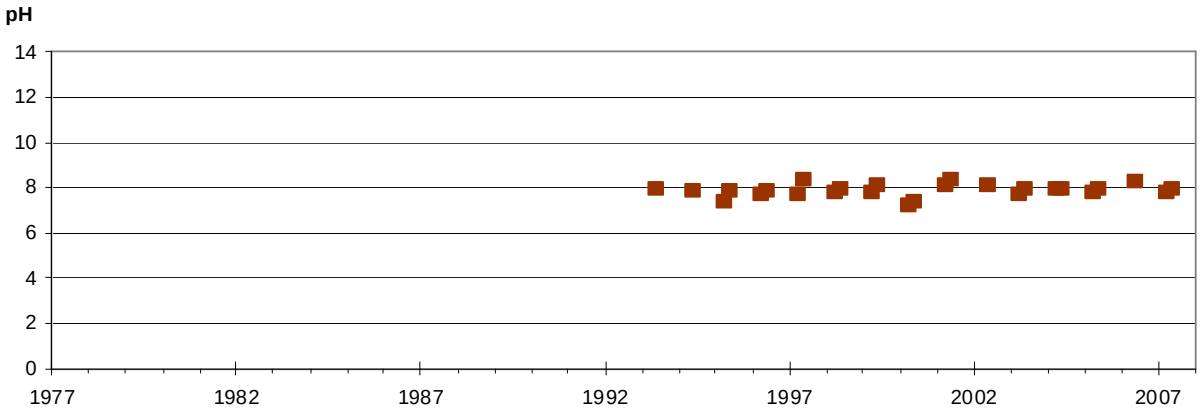


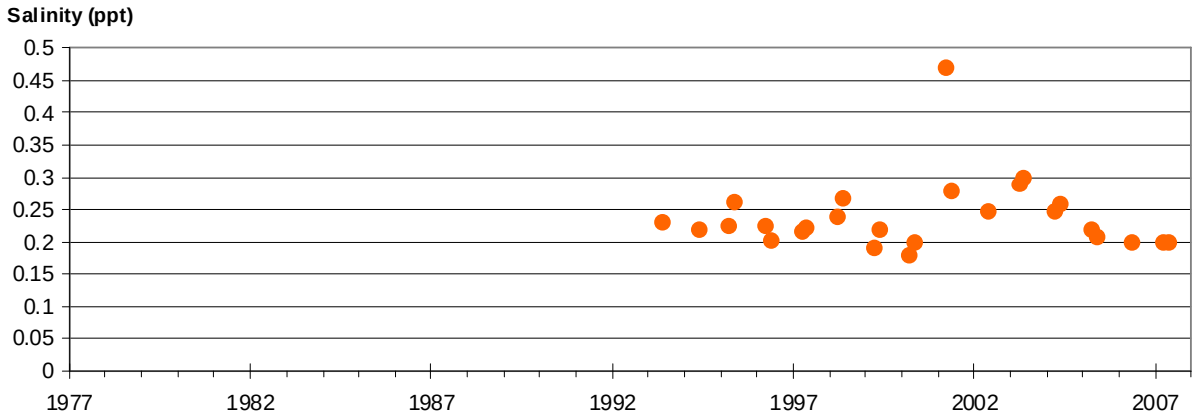
Logue is a component of the 'Lake Logue-Indoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

Logue is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

MARINGUP (C)







Notes:
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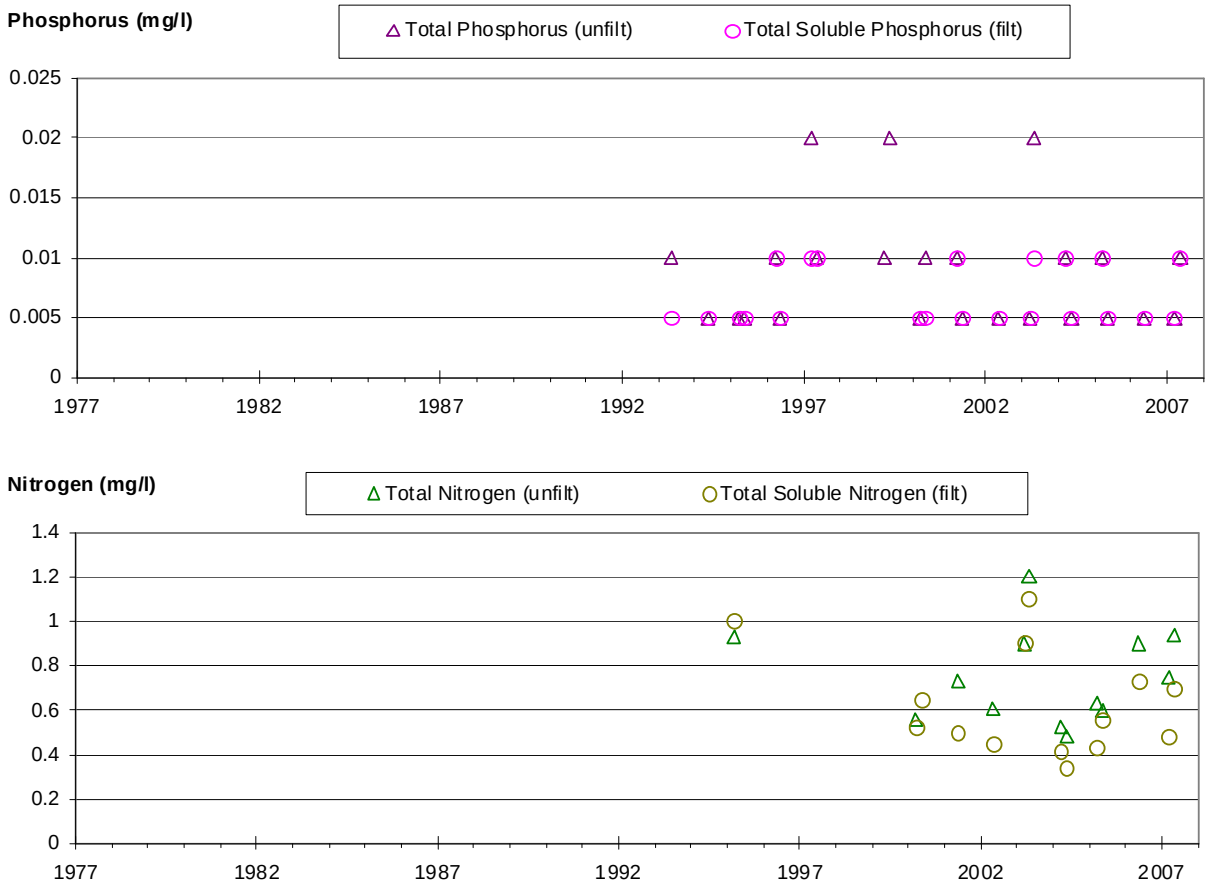
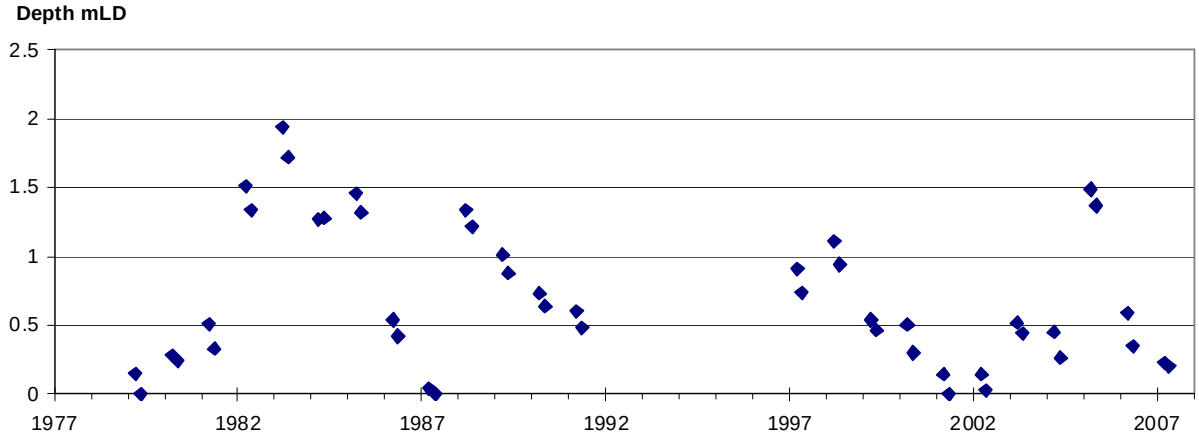
MARINGUP

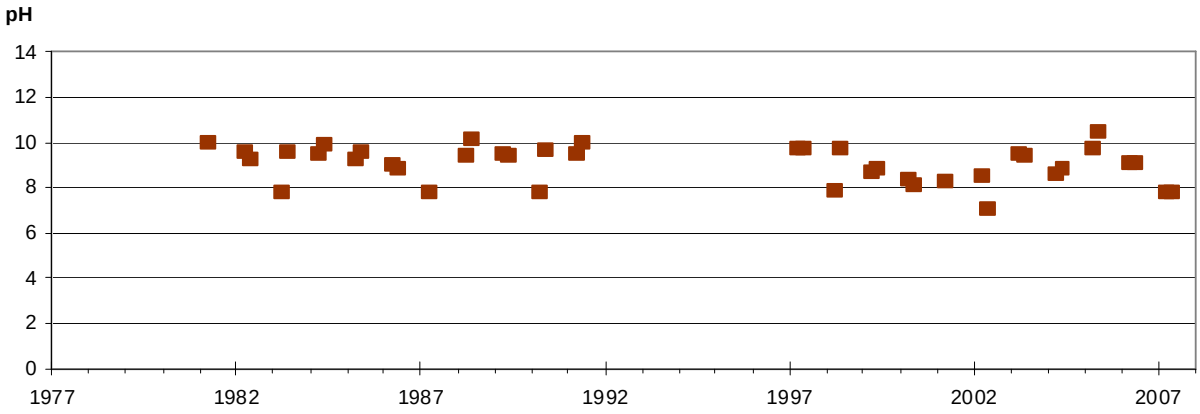


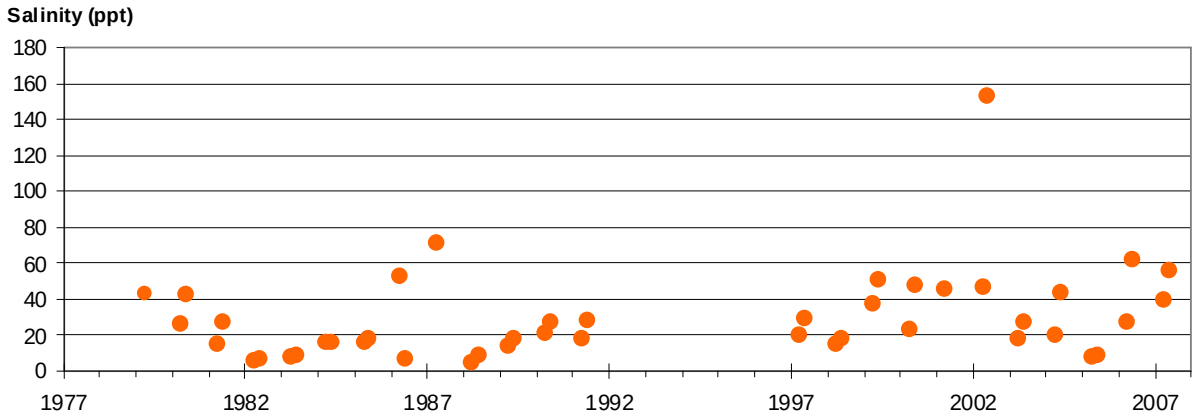
Maringup Lake is listed in the 'Directory of Important Wetlands in Australia'.

Maringup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

MARTINUP (C)

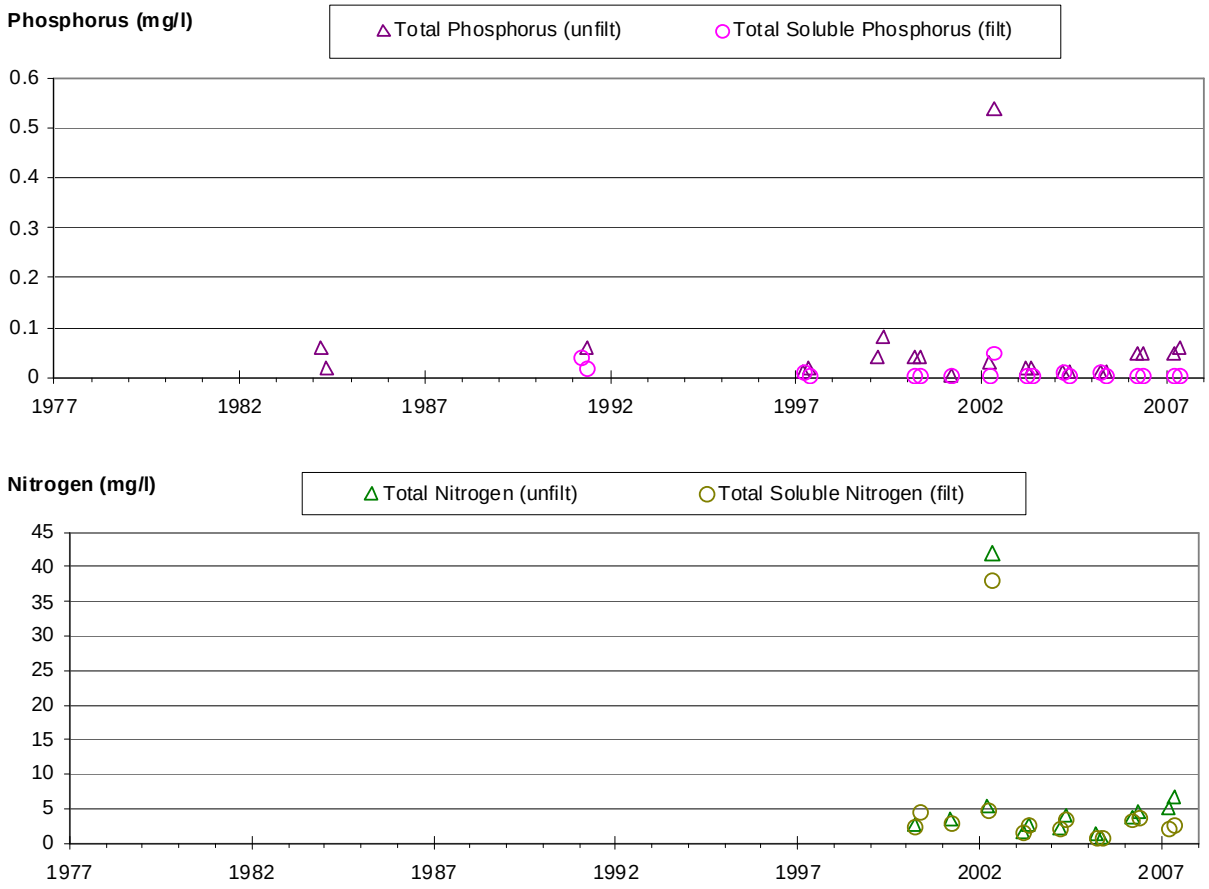






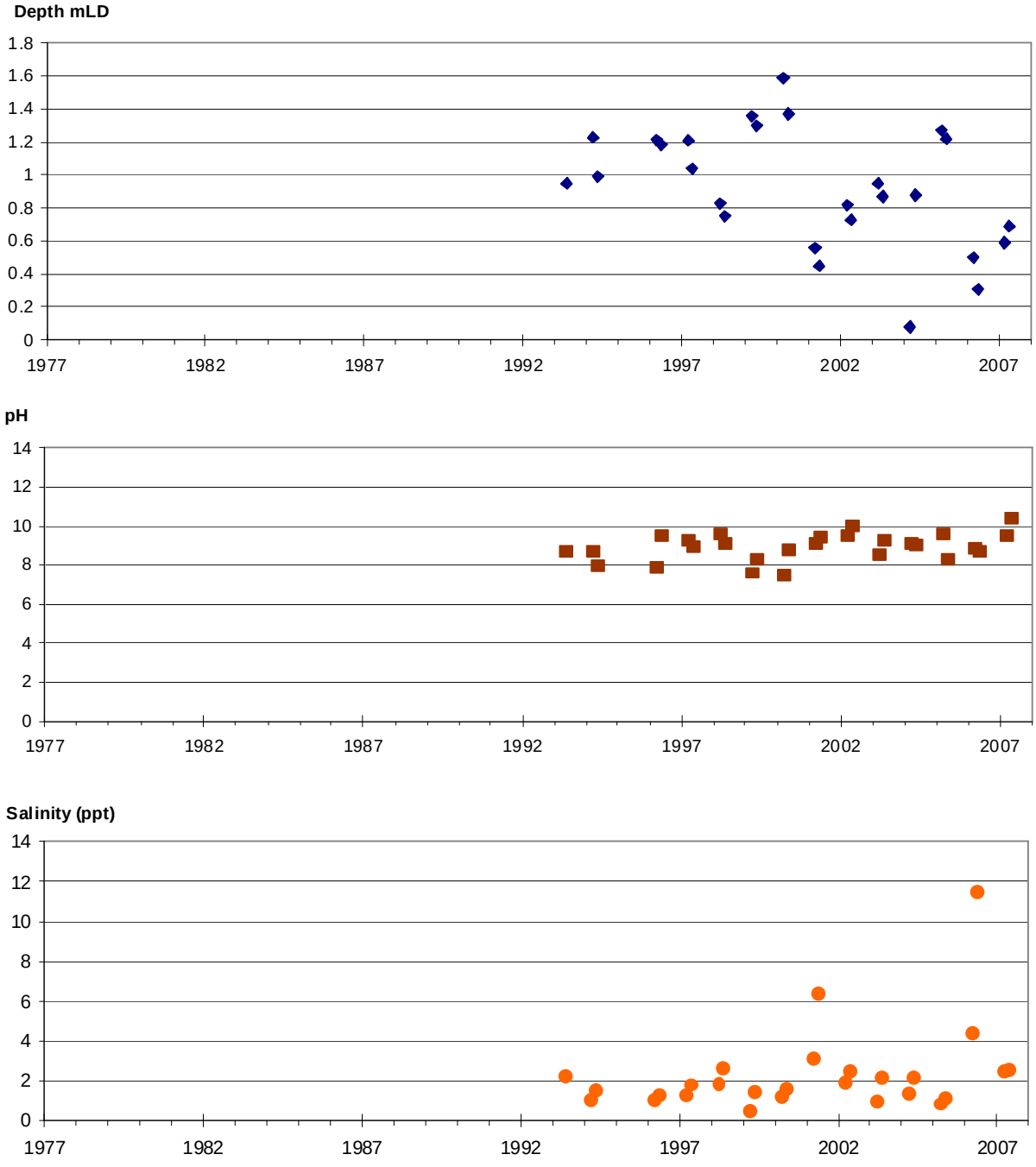
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

MARTINUP



Martinup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

McLARTY (C)



Notes:

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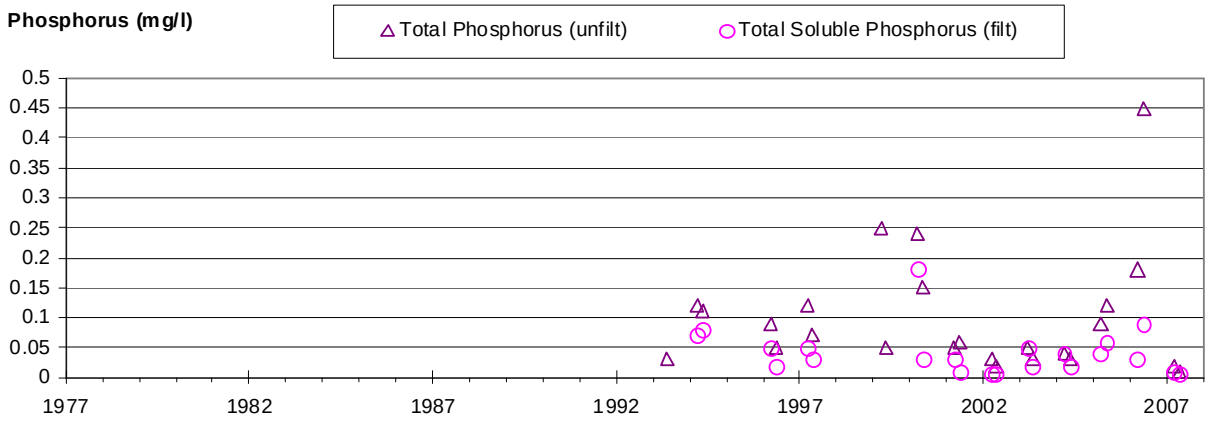
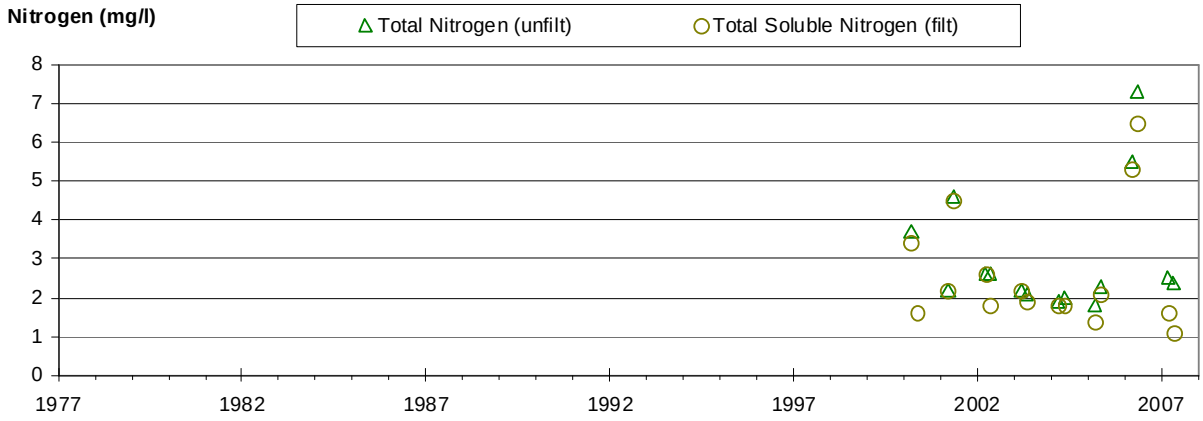
McLARTY



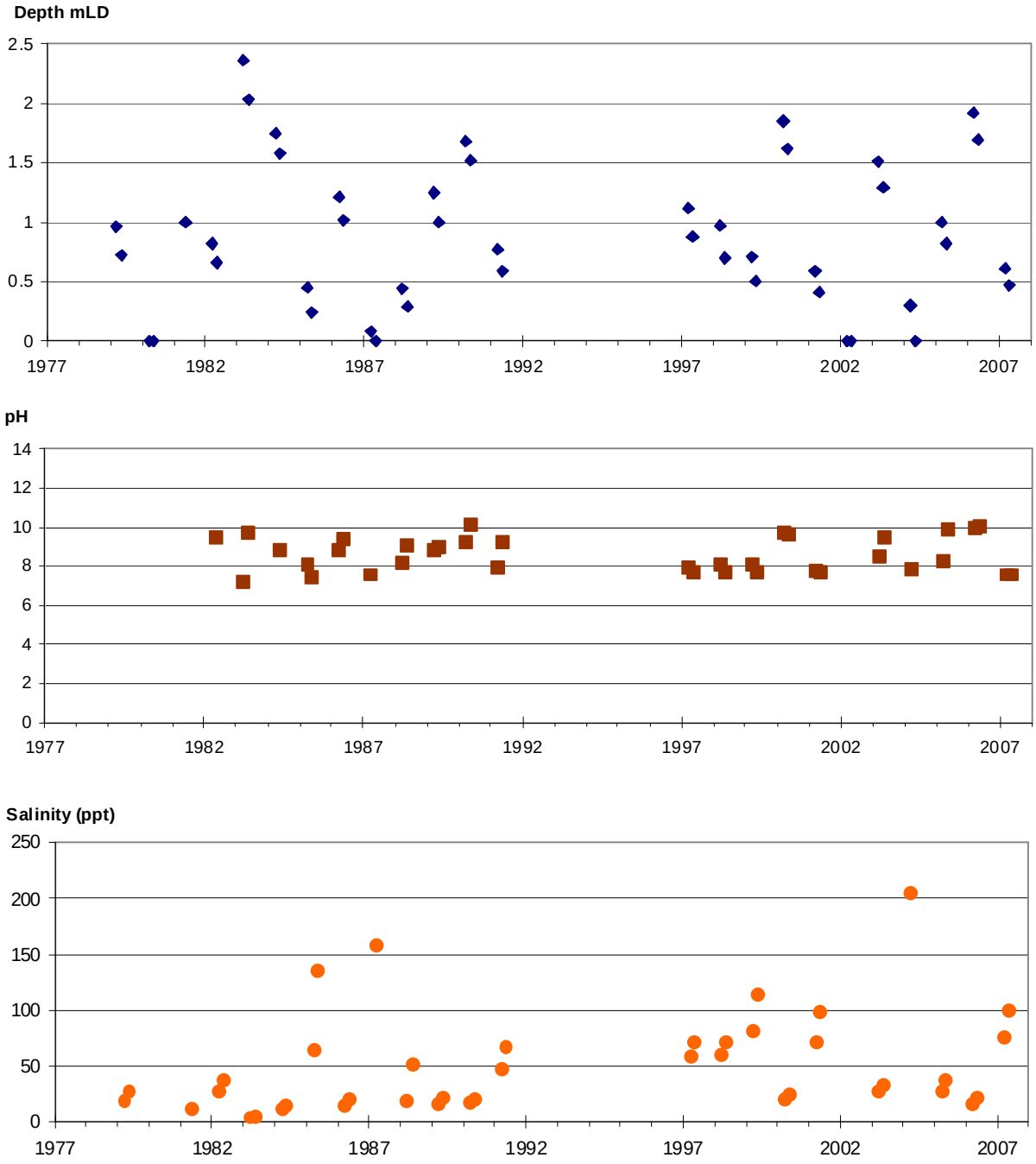


McLarty is a component of the 'Peel-Yalgorup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

McLarty is also a component of the 'Lake McLarty System', which is listed in the 'Directory of Important Wetlands in Australia'.

McLarty is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

MEARS (C)



Notes:

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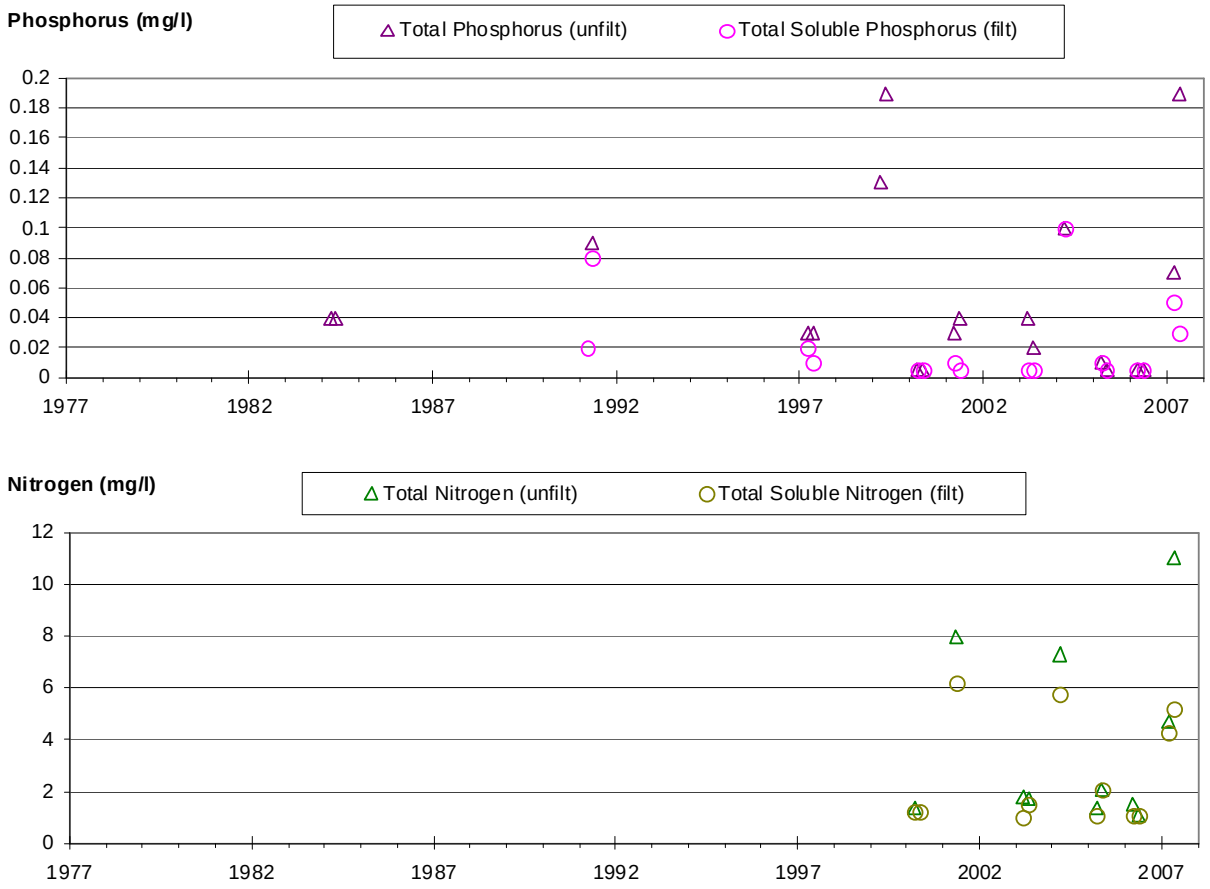
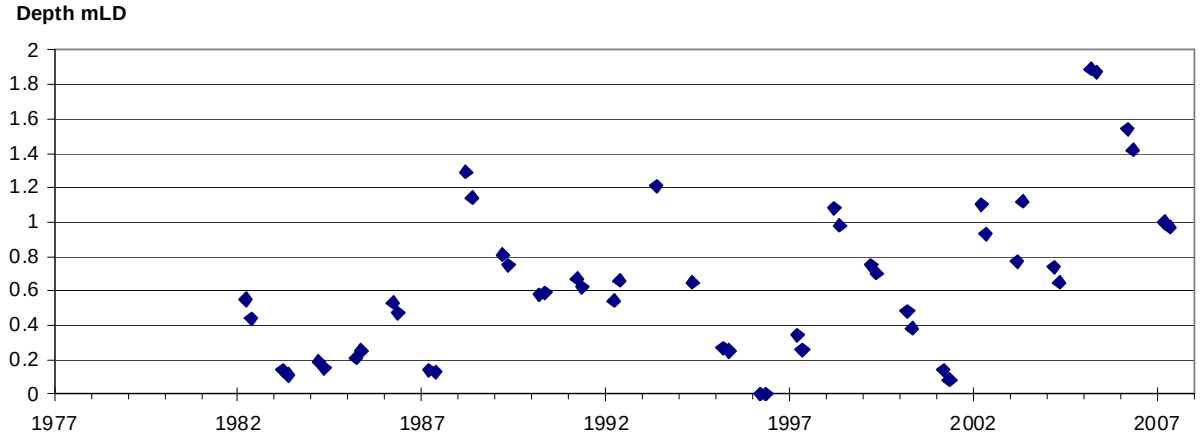
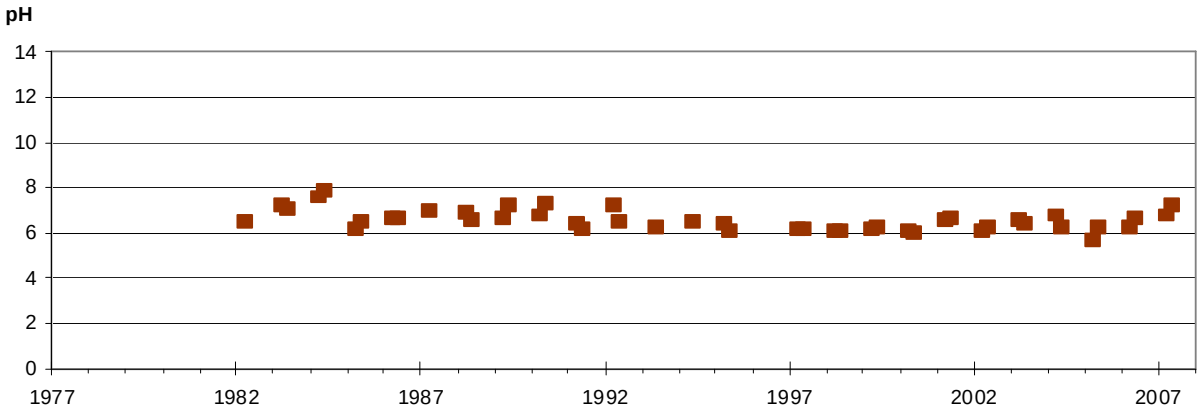
MEARS

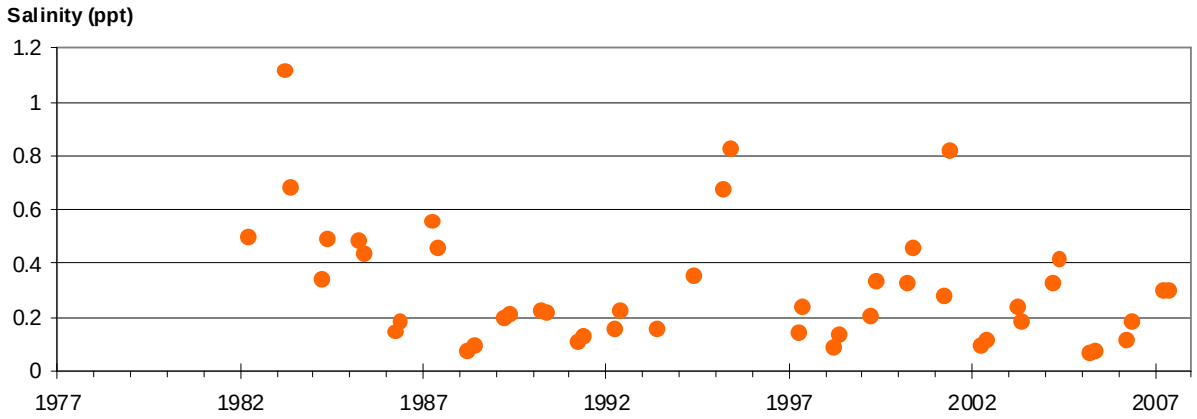


Mears is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

METTLER (C)







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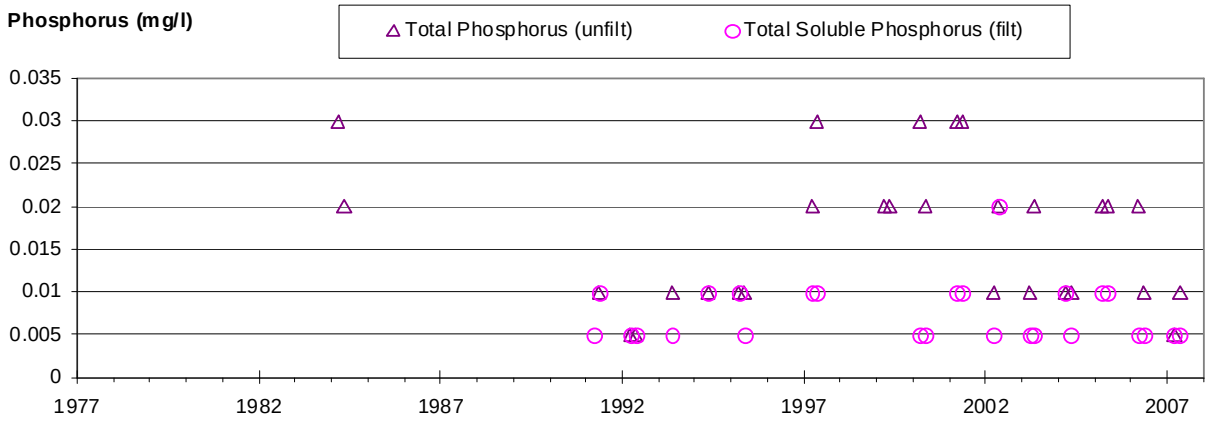
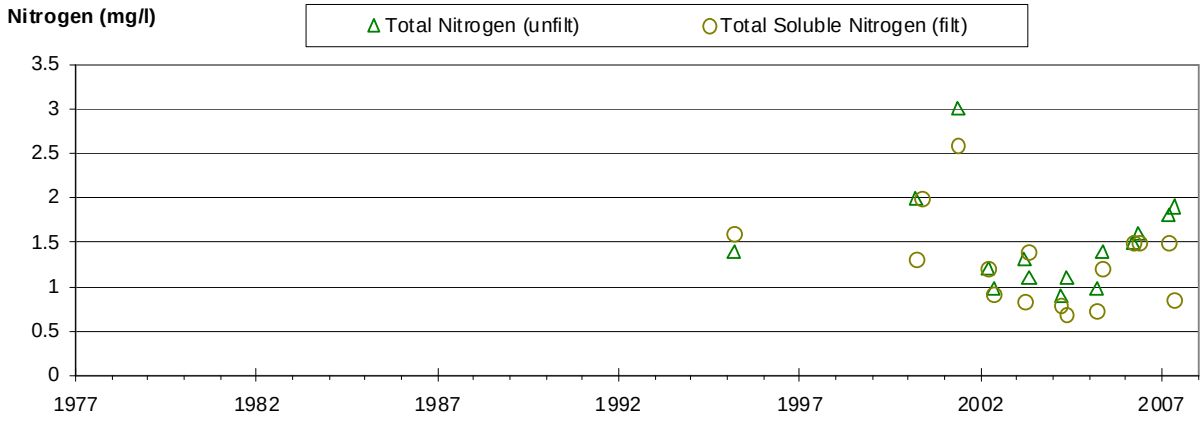
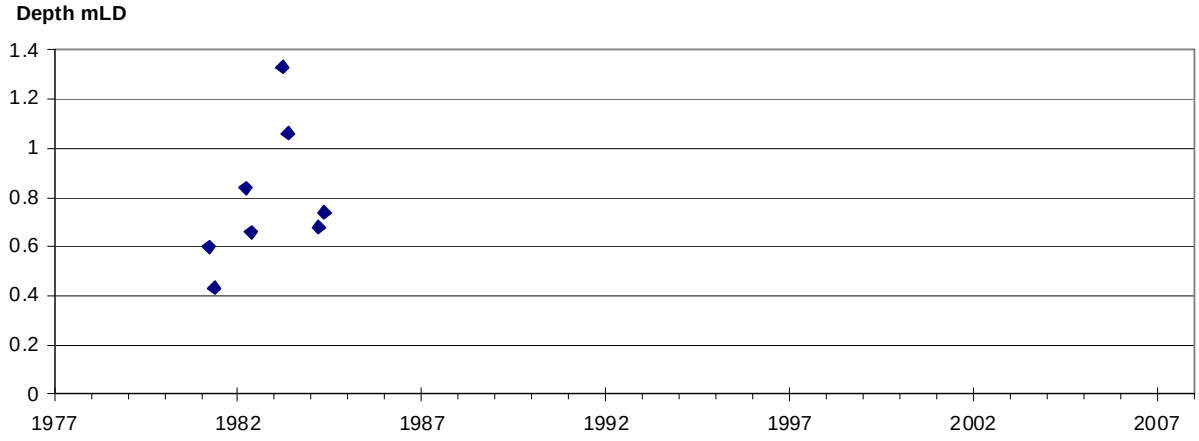
METTLER

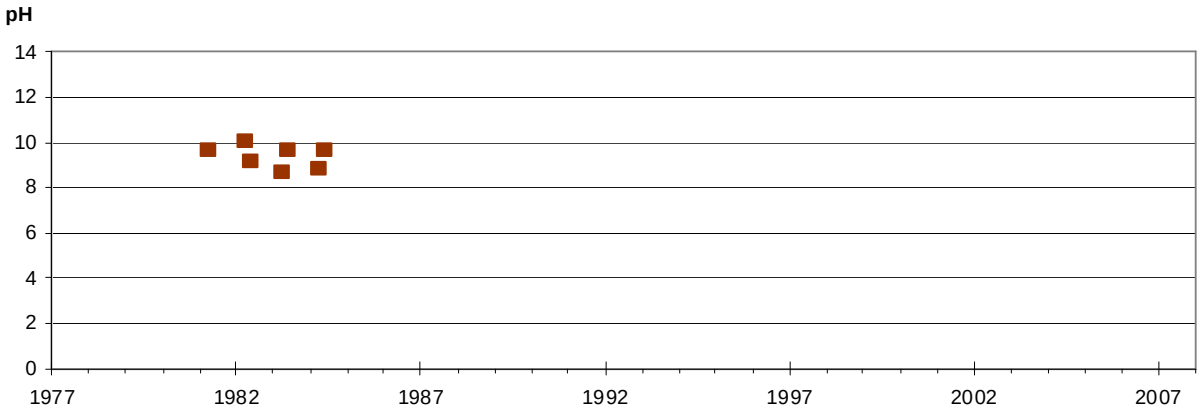


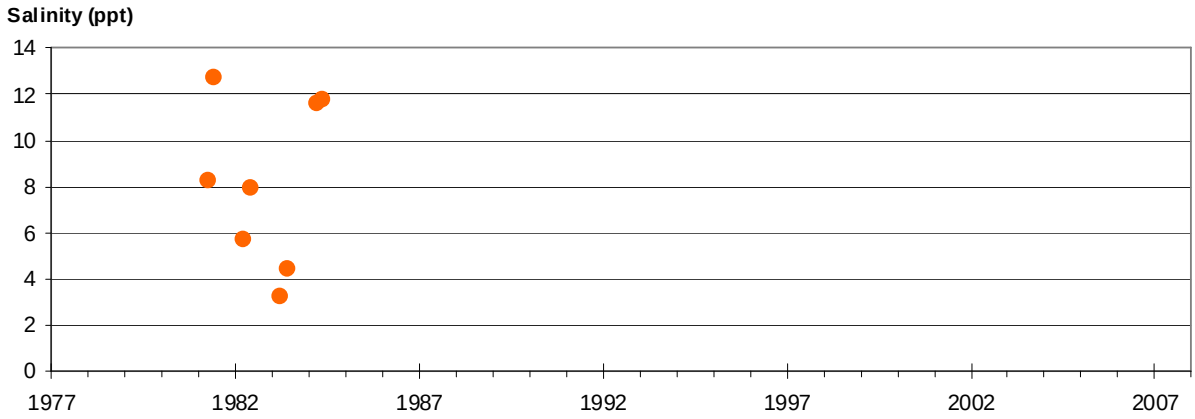


Mettler is in the Albany District of the South Coast DEC Region

MIRIPIN (H)







Notes:
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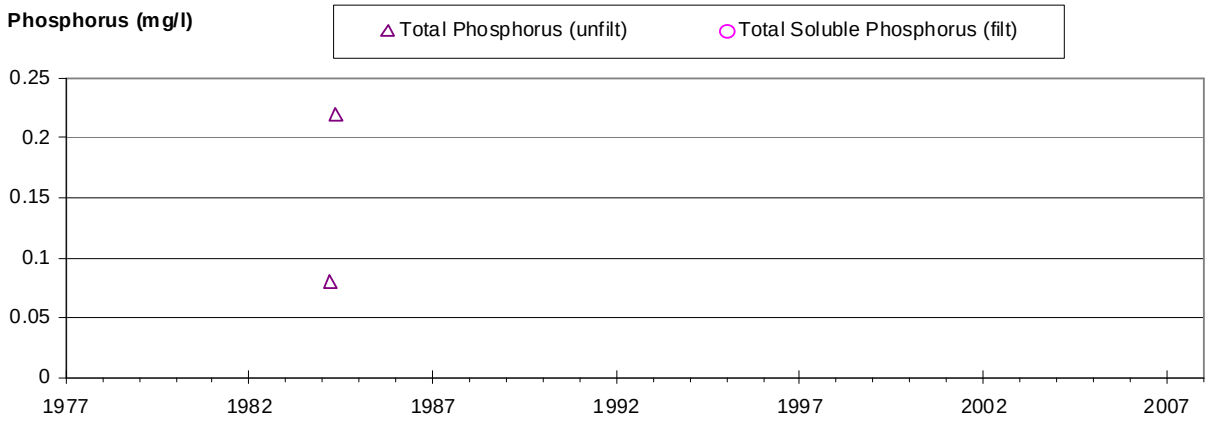
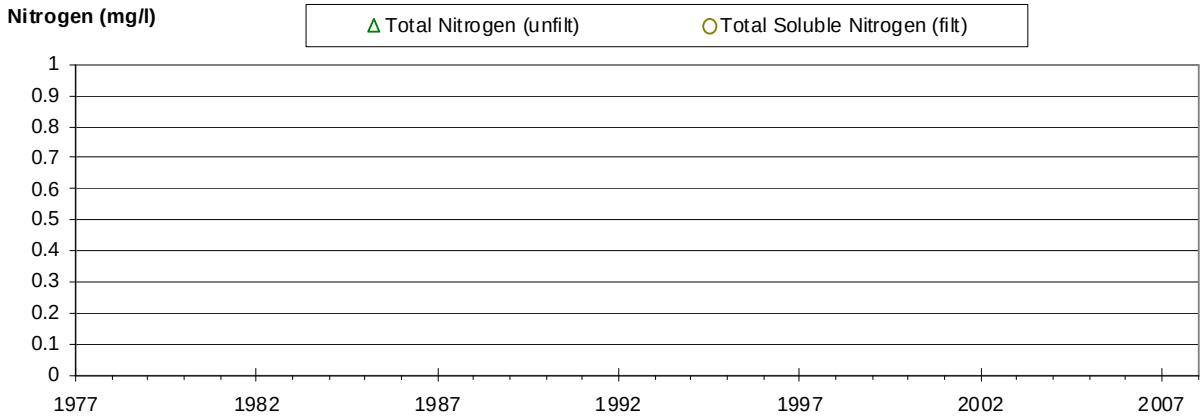
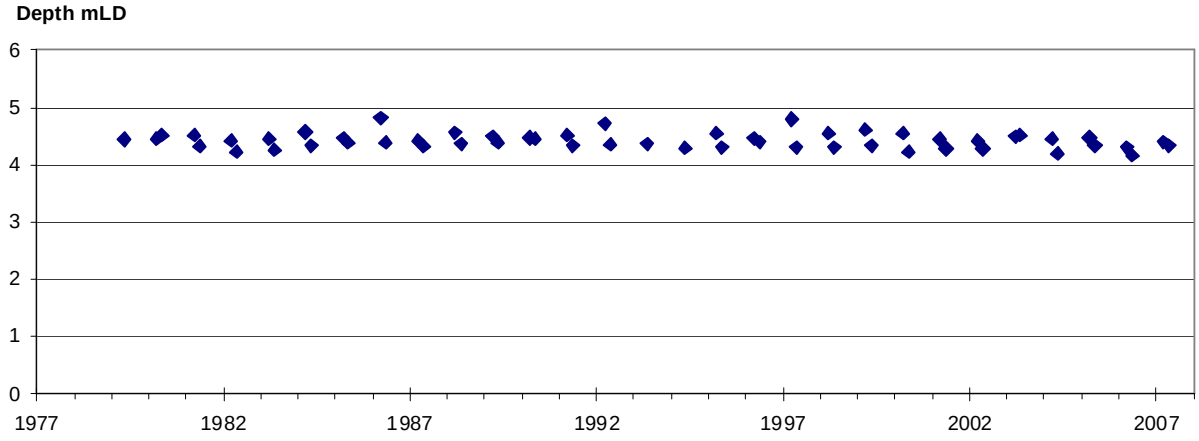
MIRIPIN

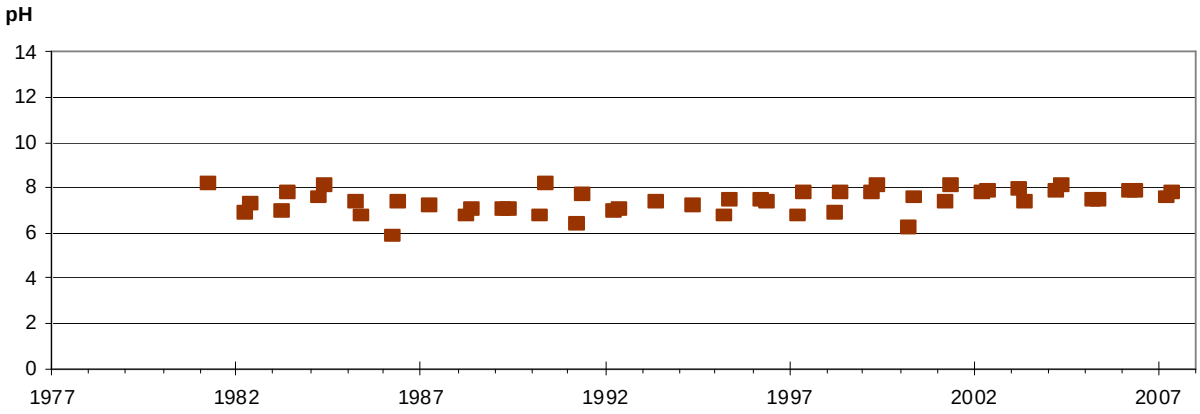


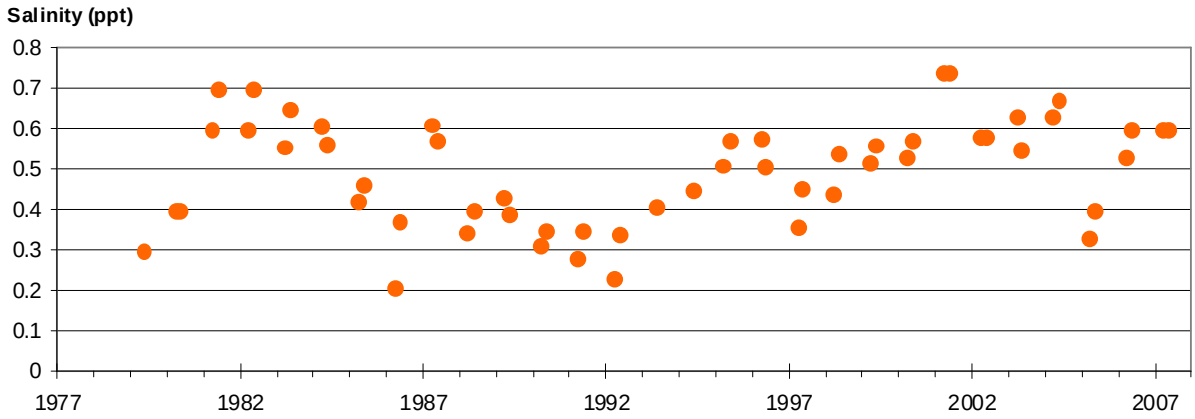


Miripin is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

MOATES (C)







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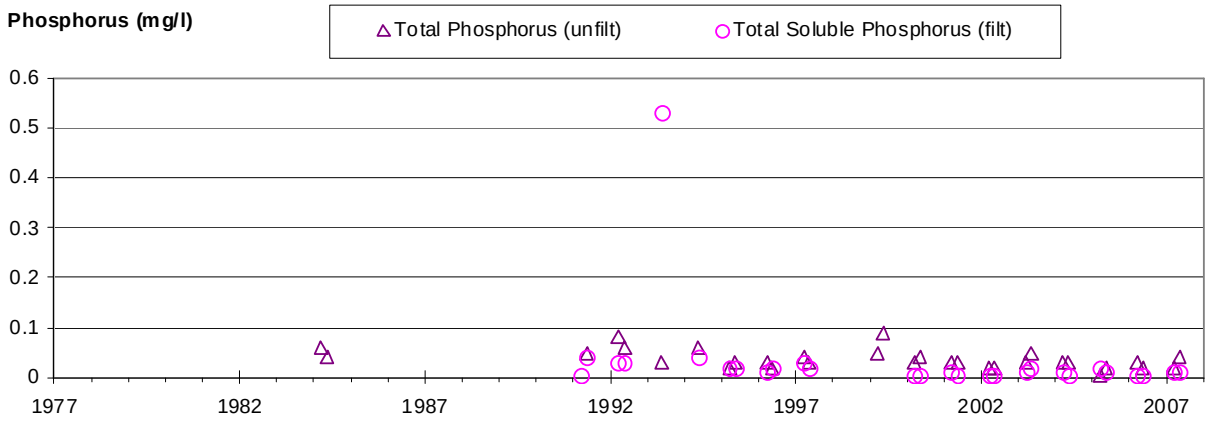
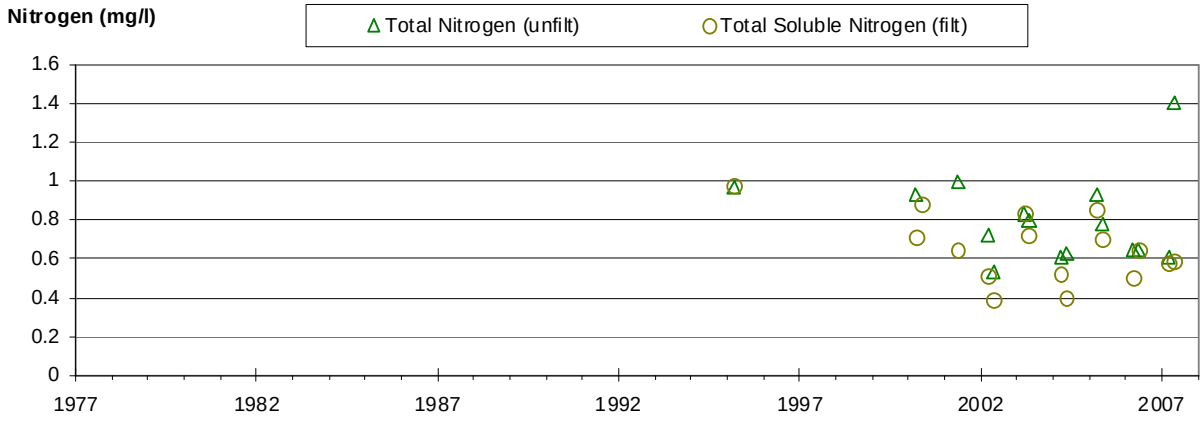
MOATES

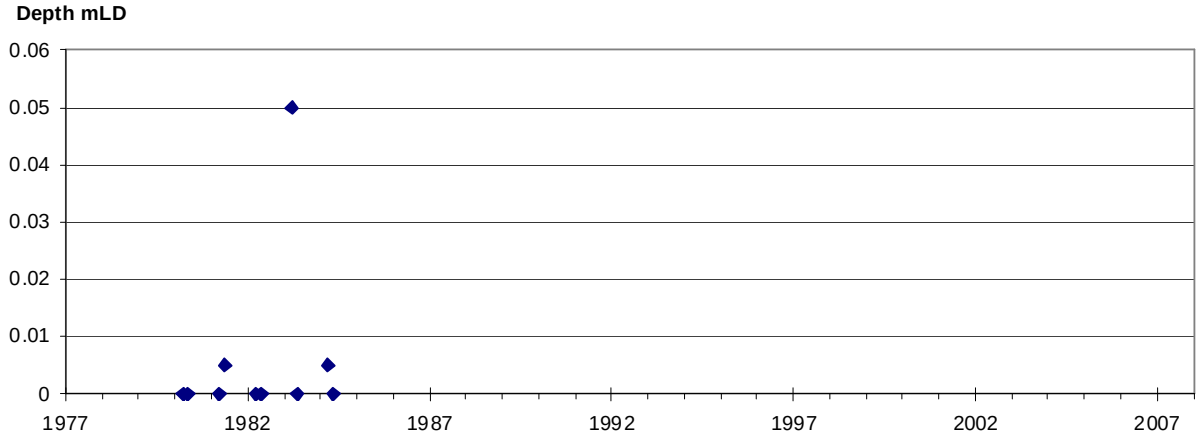


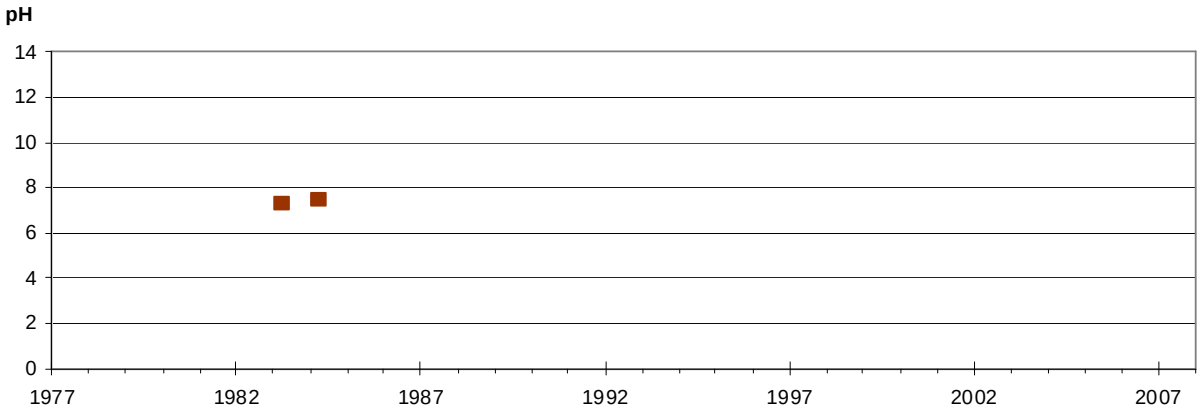


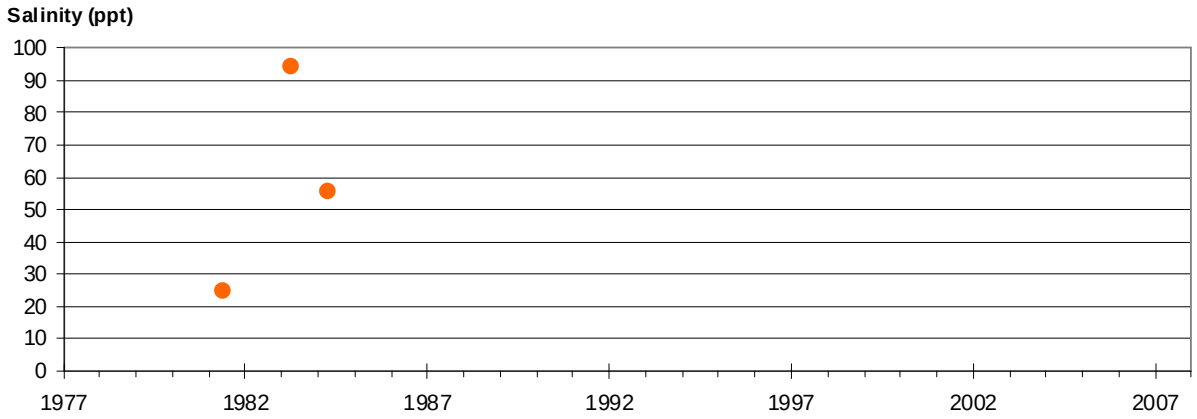
Moates is a component of the 'Moates Lake System', which is listed in the 'Directory of Important Wetlands in Australia'.

Moates is in the Albany District of the South Coast DEC Region

MOLLERIN (H)







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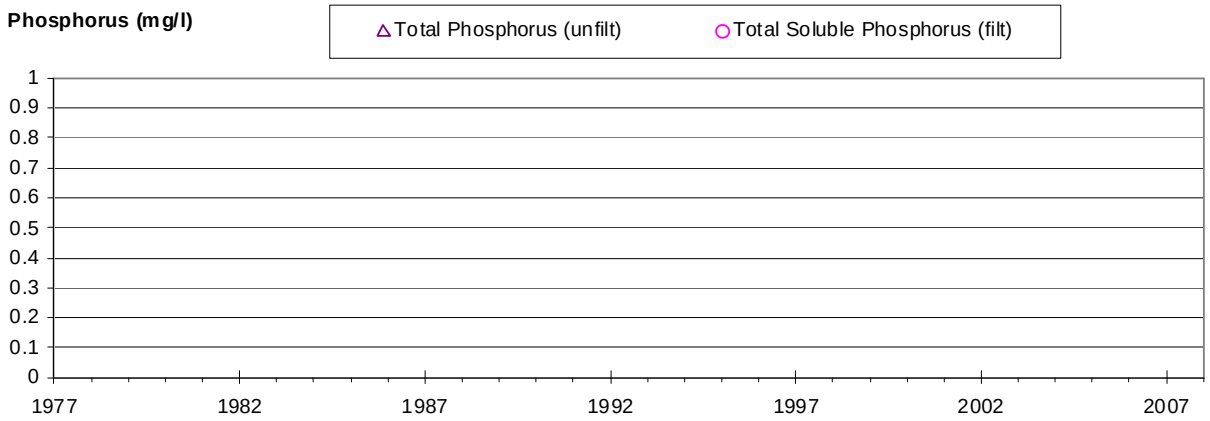
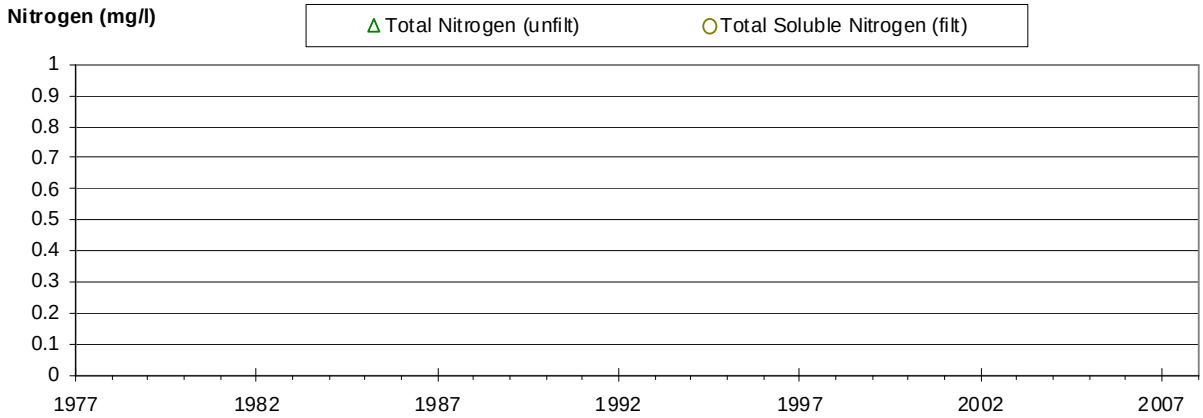
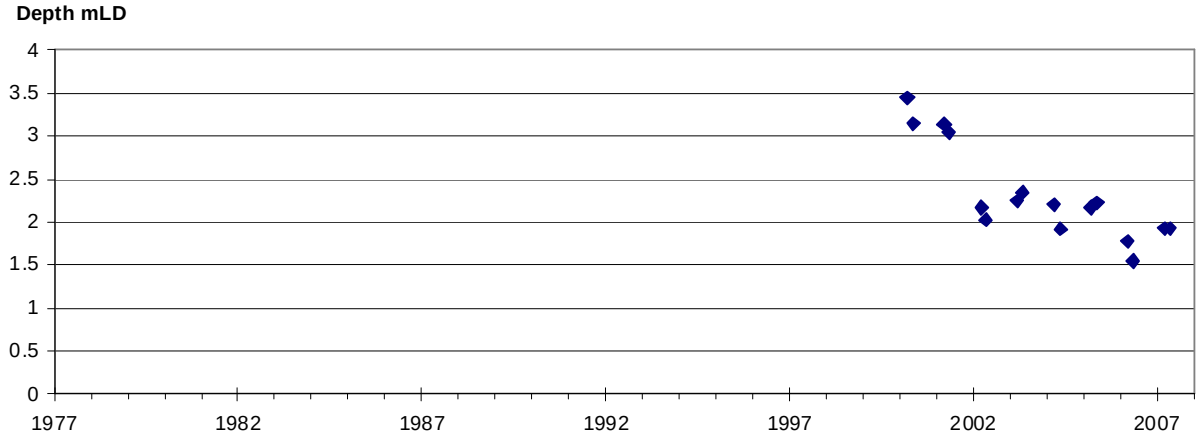
MOLLERIN

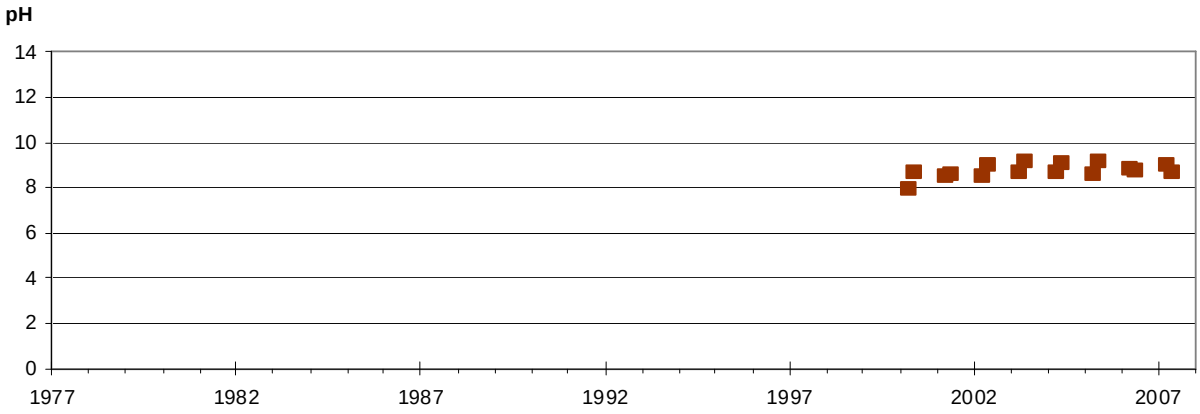


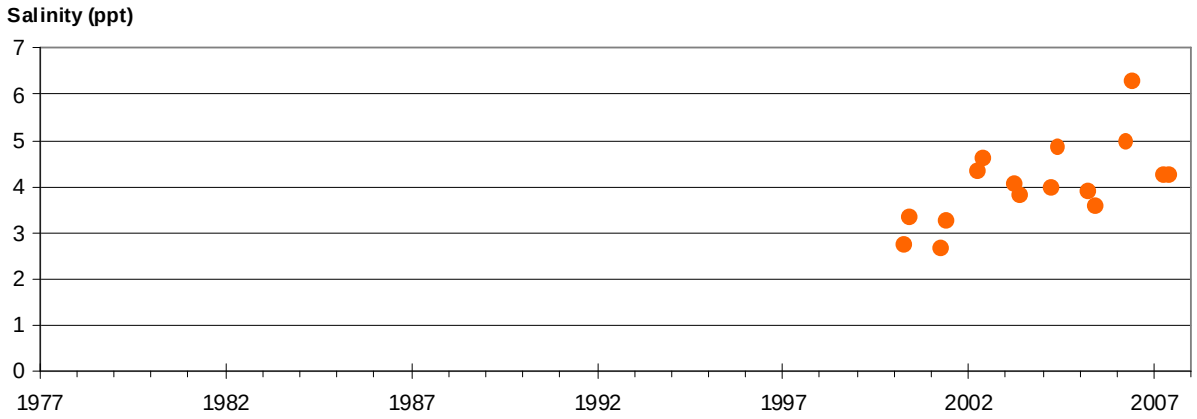


Mollerin is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

MORTIJINUP (C)







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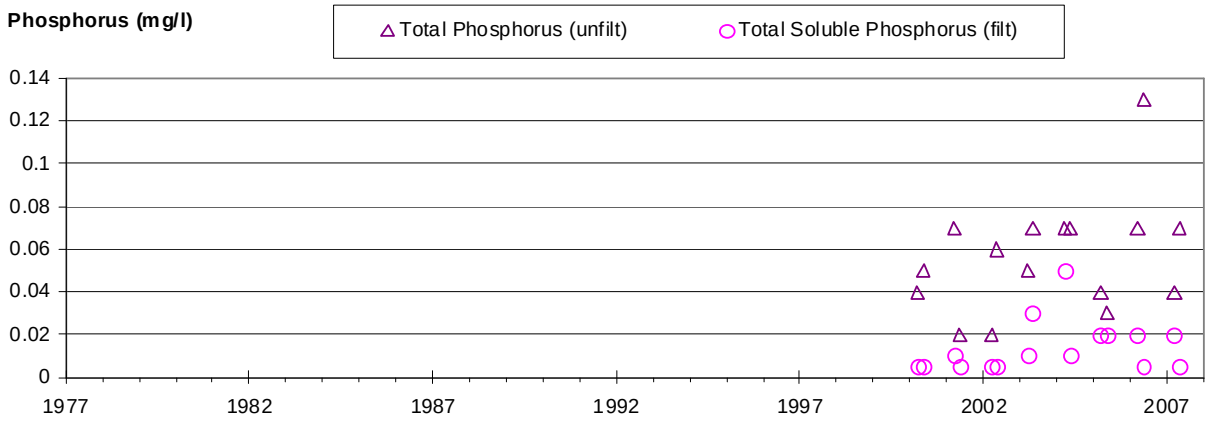
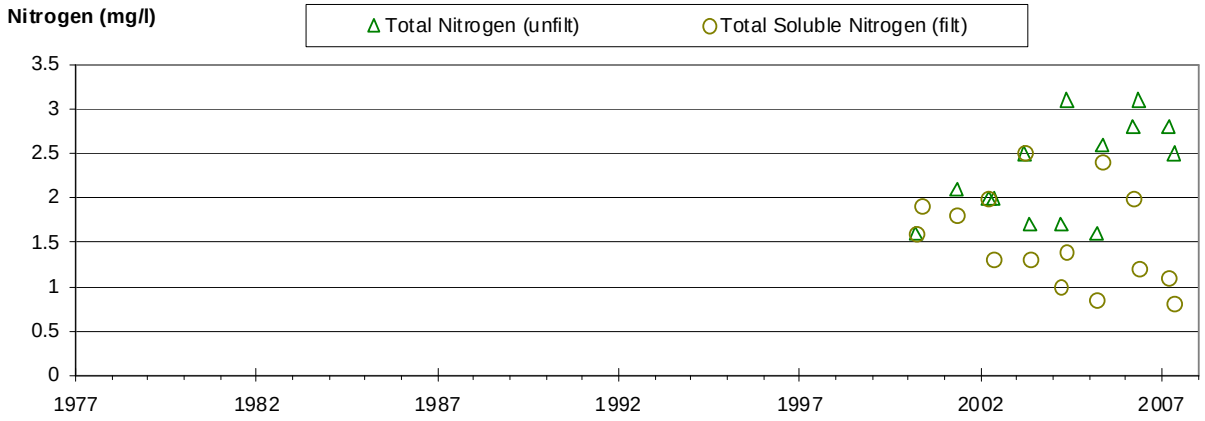
MORTIJINUP

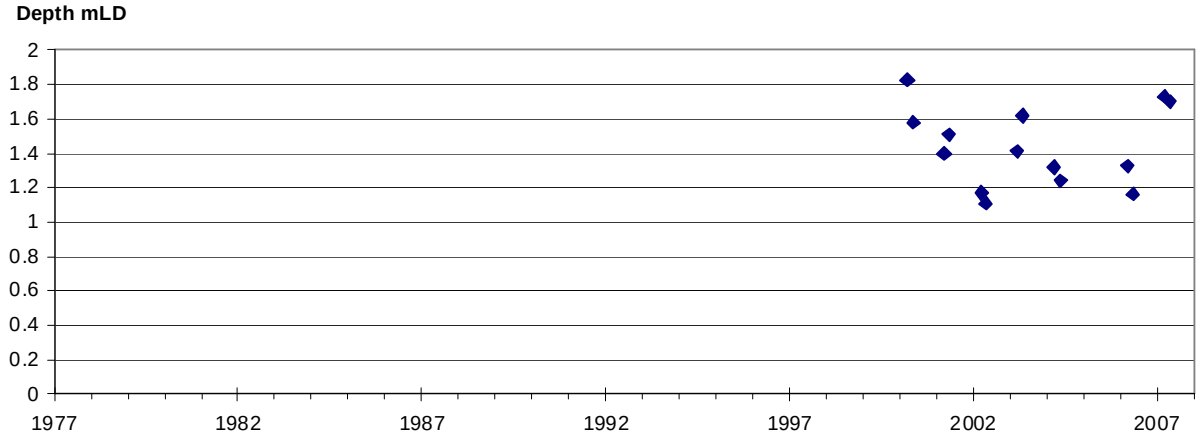


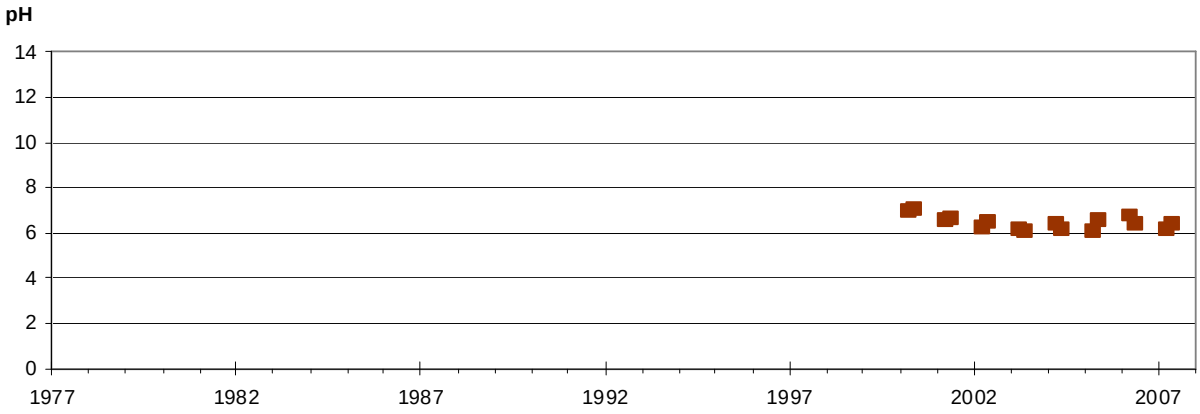


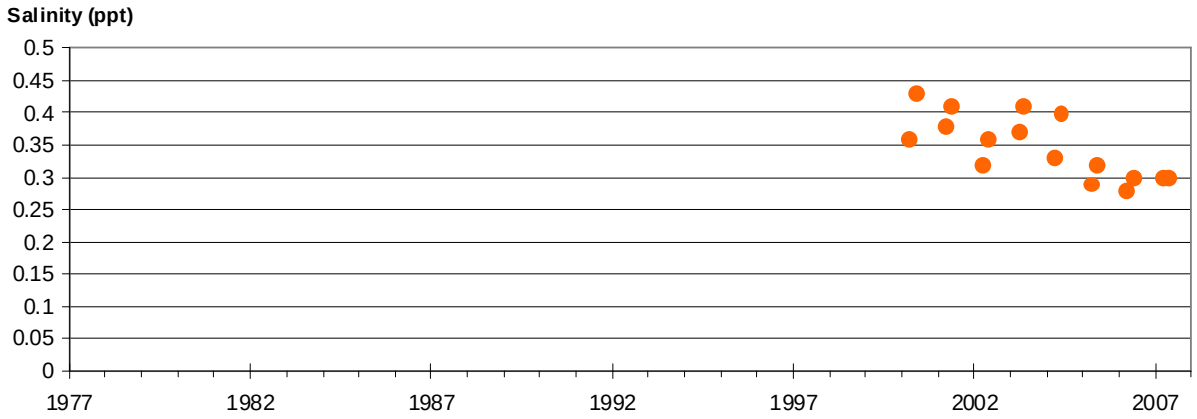
Mortijinup is a component of the 'Mortijinup Lake System', which is listed in the 'Directory of Important Wetlands in Australia'.

Mortijinup is in the Esperance District of the South Coast DEC Region.

MOUNT LE GRAND (C)







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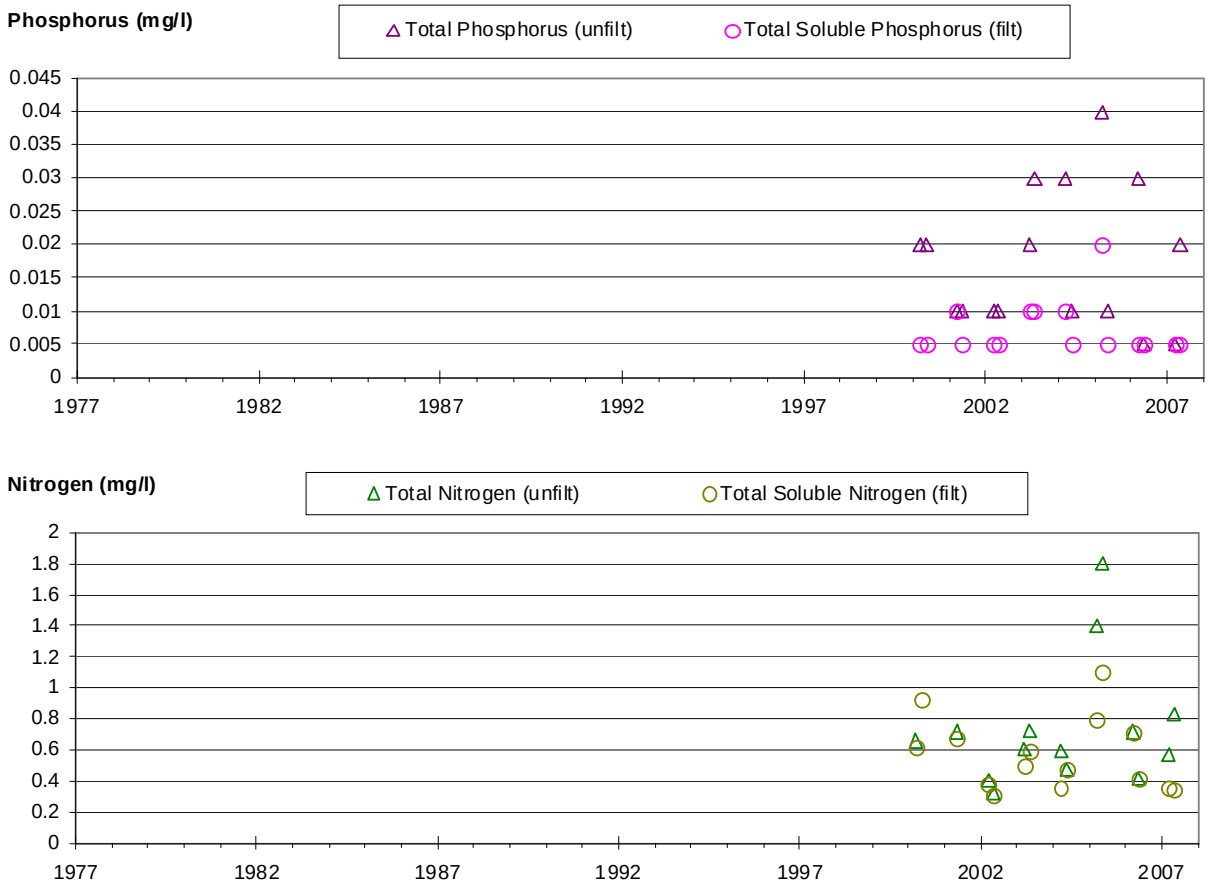
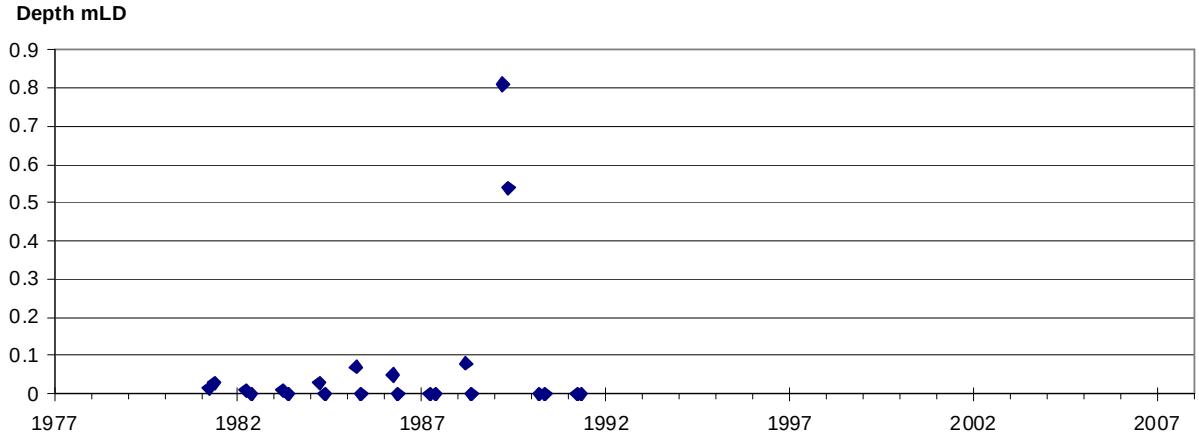
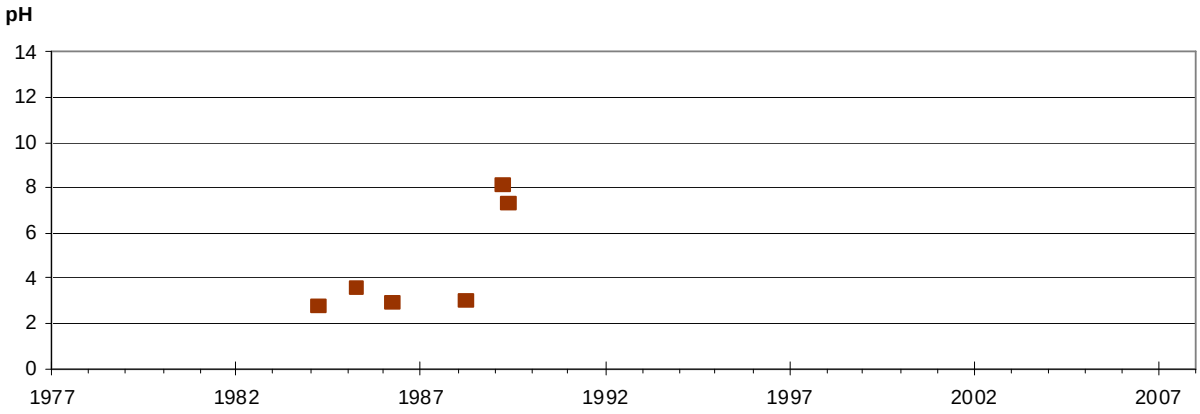
MOUNT LE GRAND

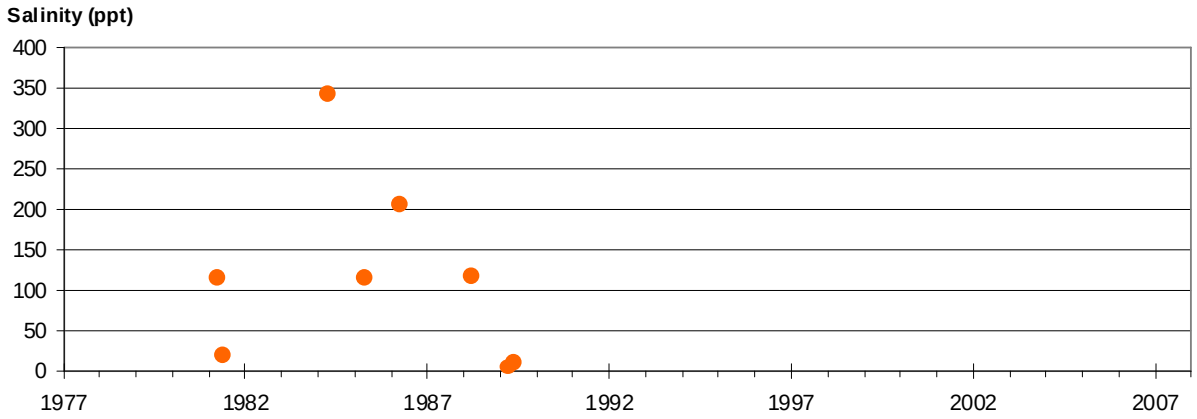


Mount Le Grand is in the Esperance District of the South Coast DEC Region.

MOUNT MARSHALL 26687 (H)

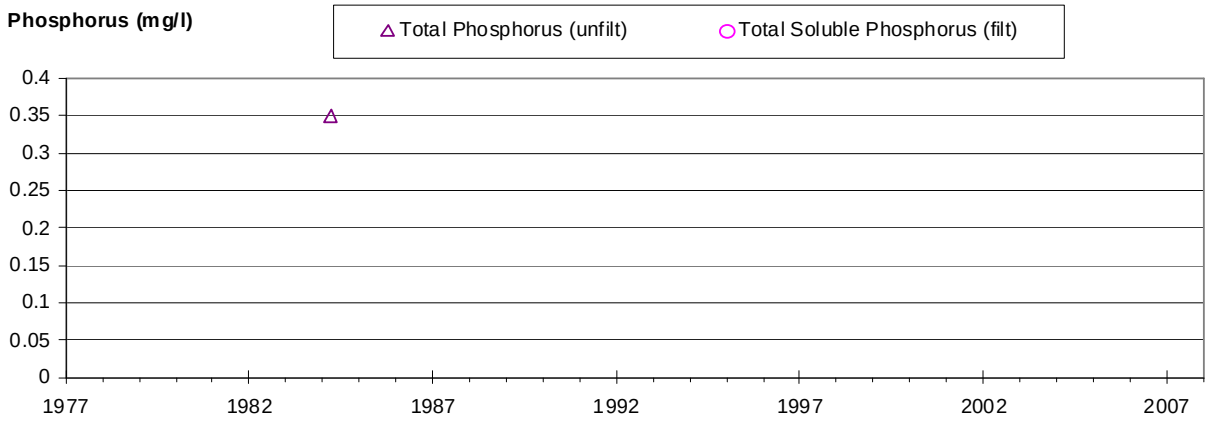


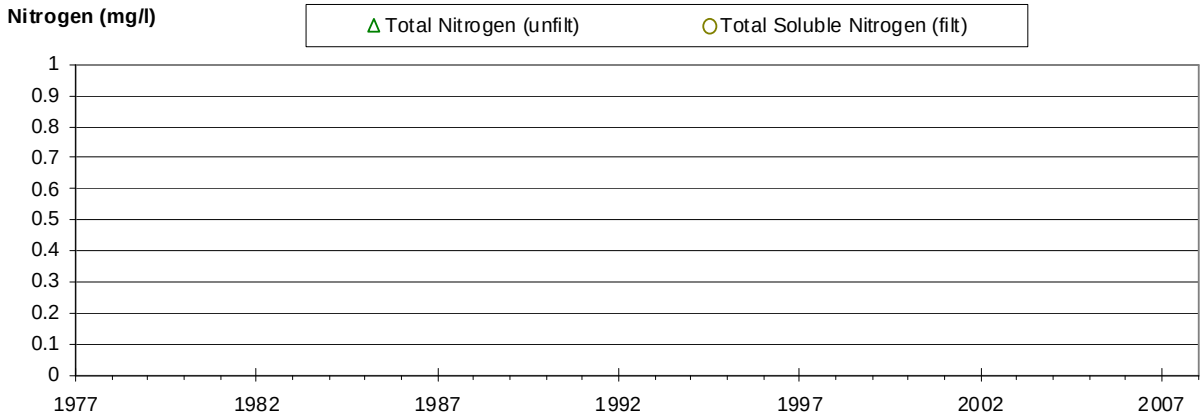




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

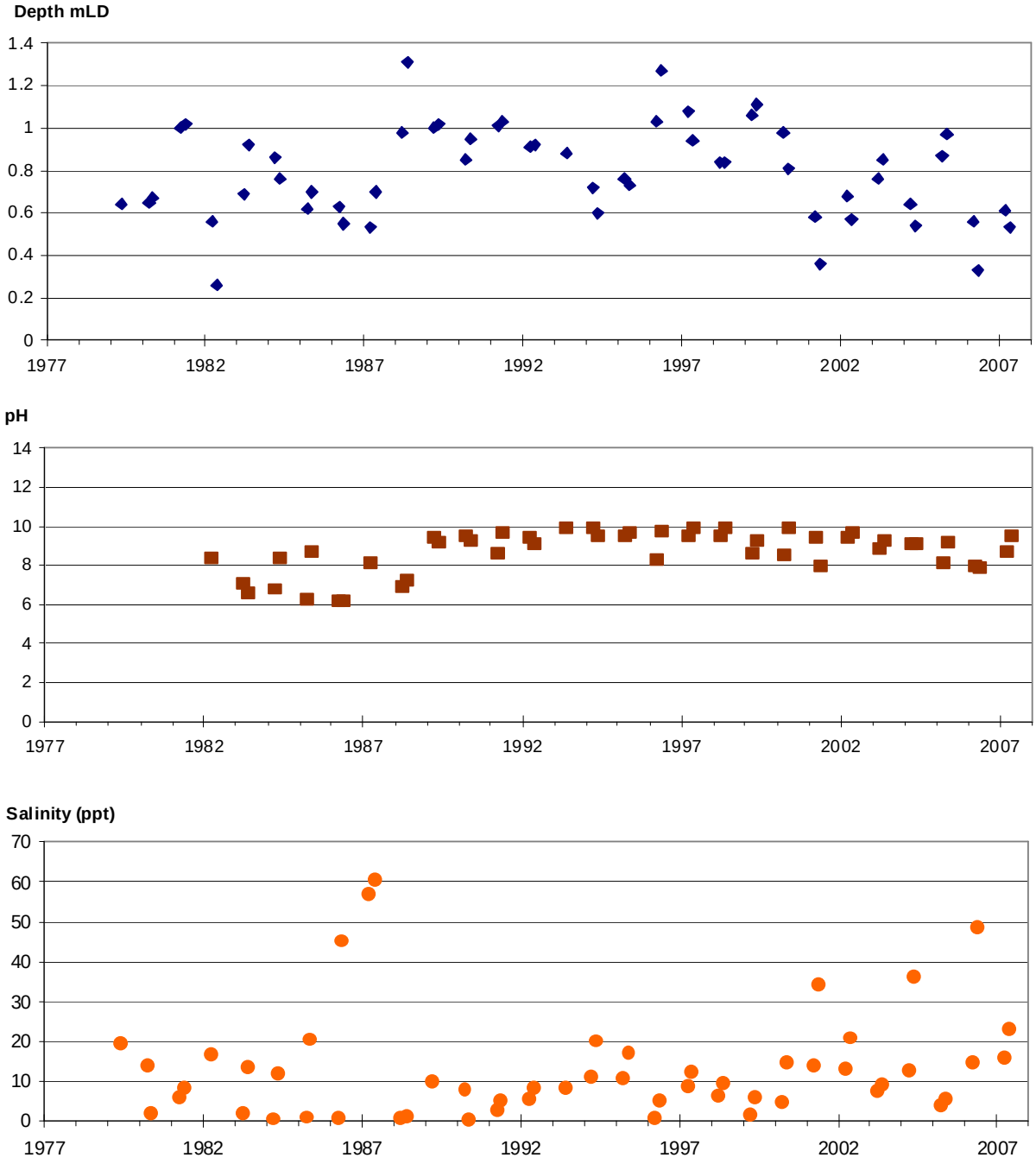
MOUNT MARSHALL 26687





Mount Marshall 26687 is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

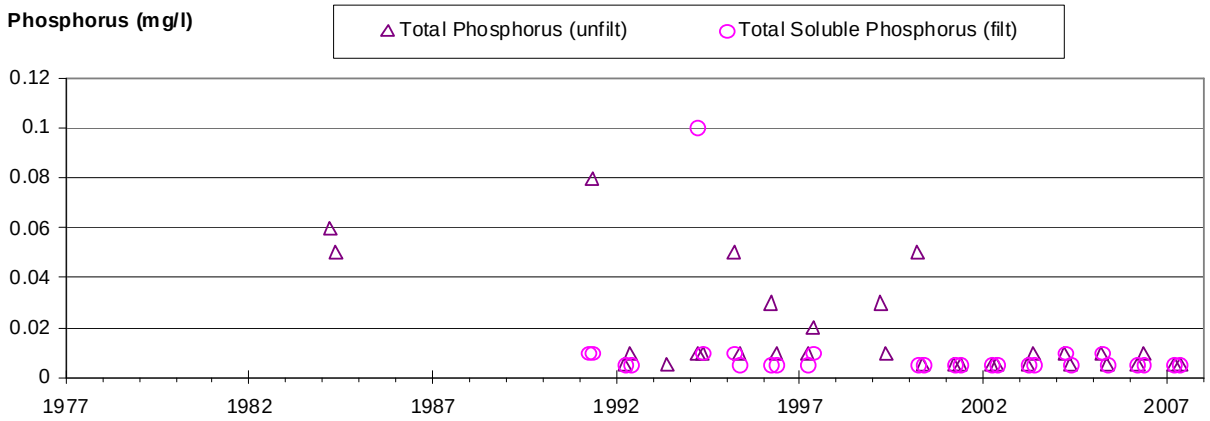
MUIR (C)

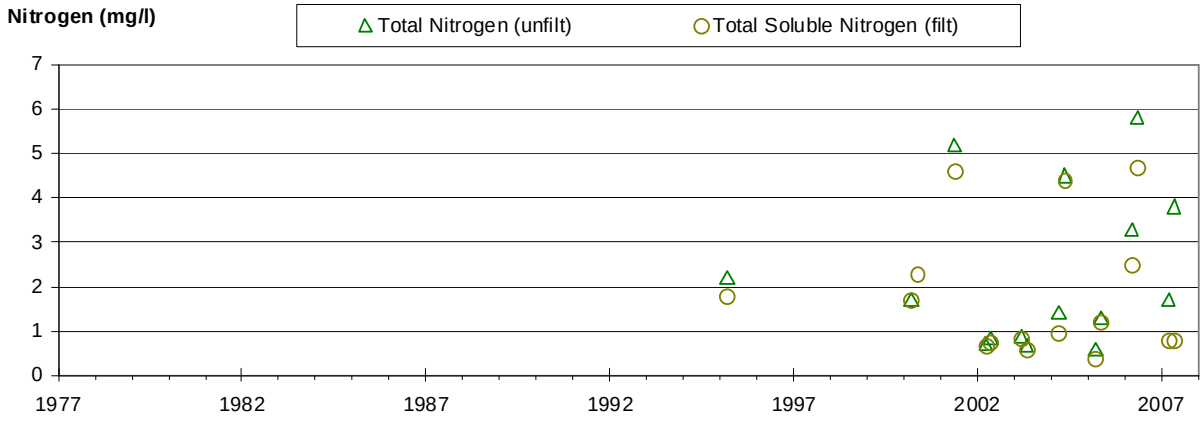


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

MUIR





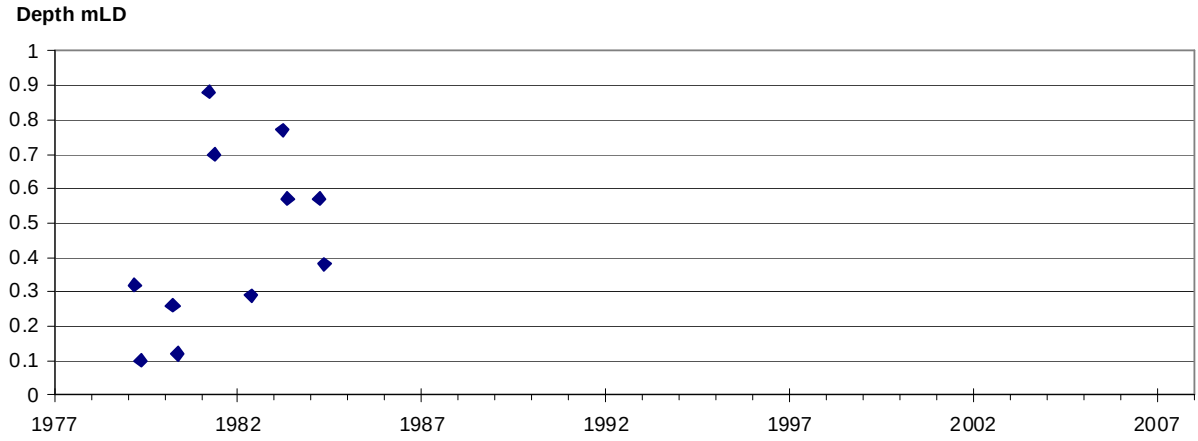
Lake Muir is a component of the 'Muir-Byenup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

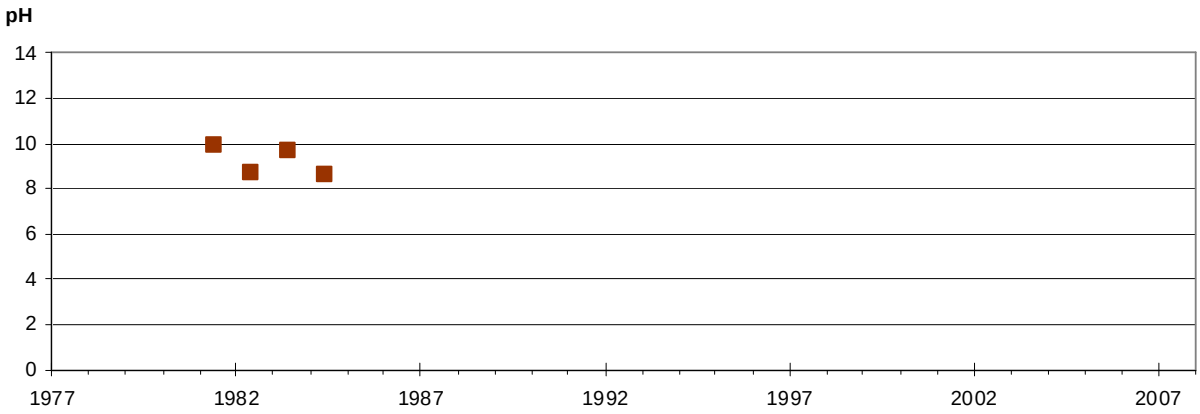
Lake Muir is also listed in the 'Directory of Important Wetlands in Australia'.

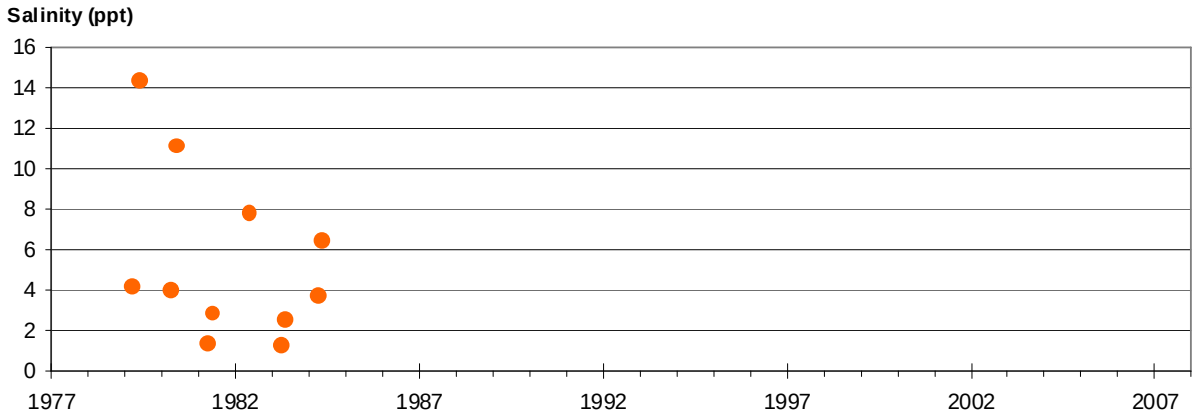
Muir is within the Muir-Unicup Natural Diversity Recovery Catchment.

Muir is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

MUNGALA (H)

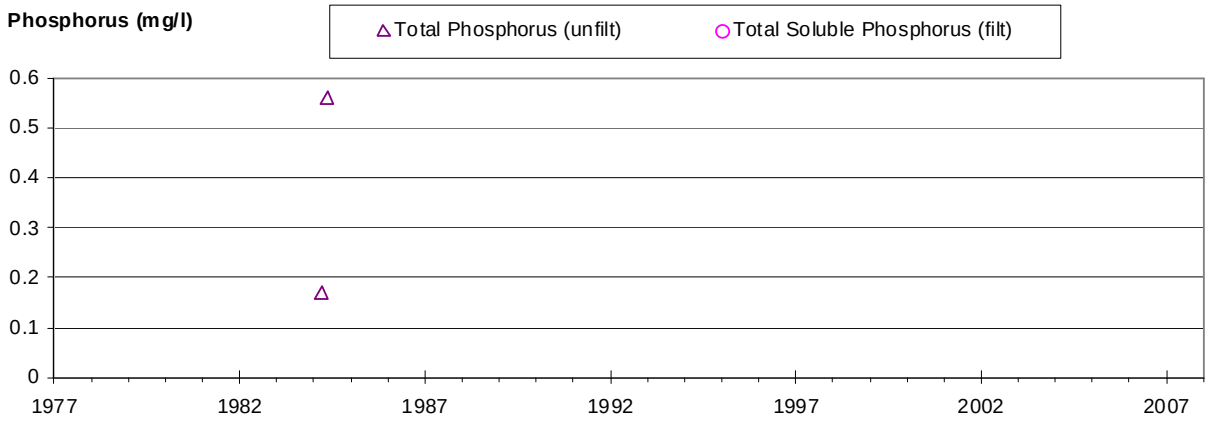


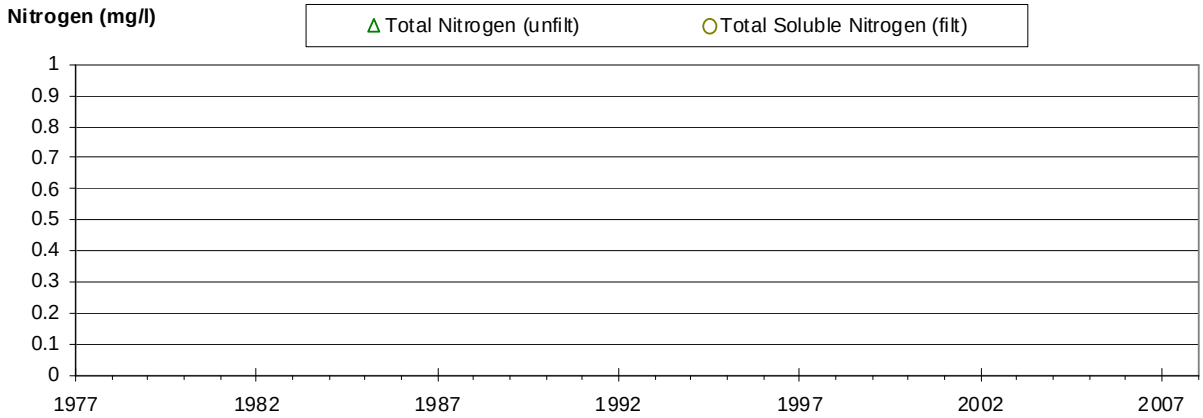




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

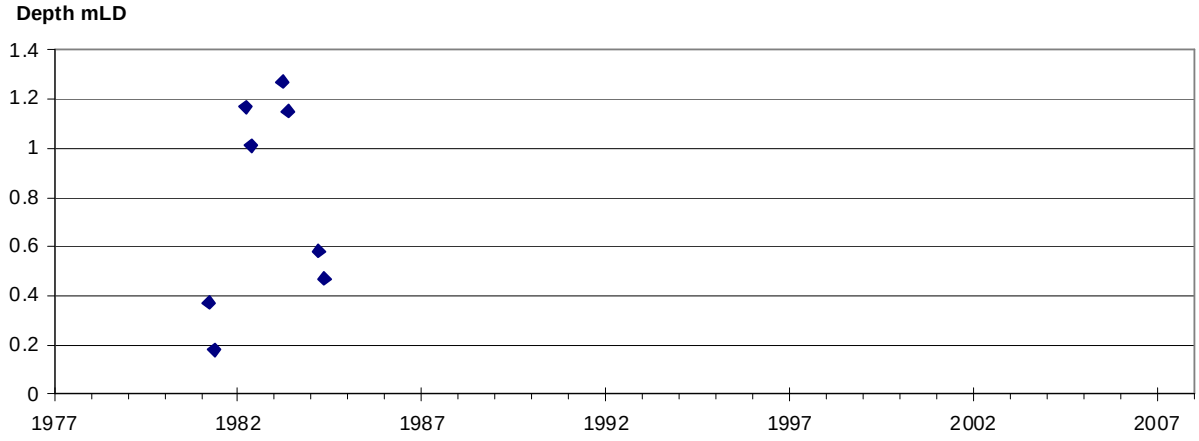
MUNGALA

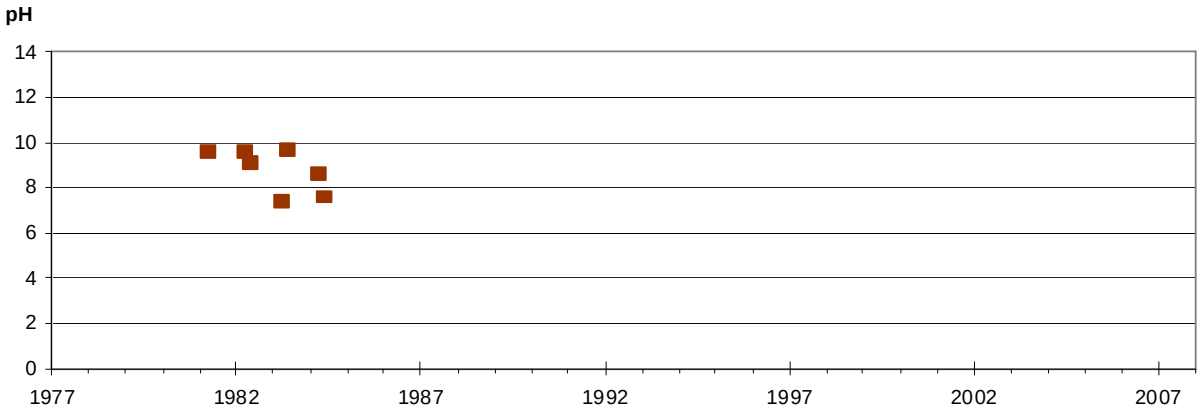


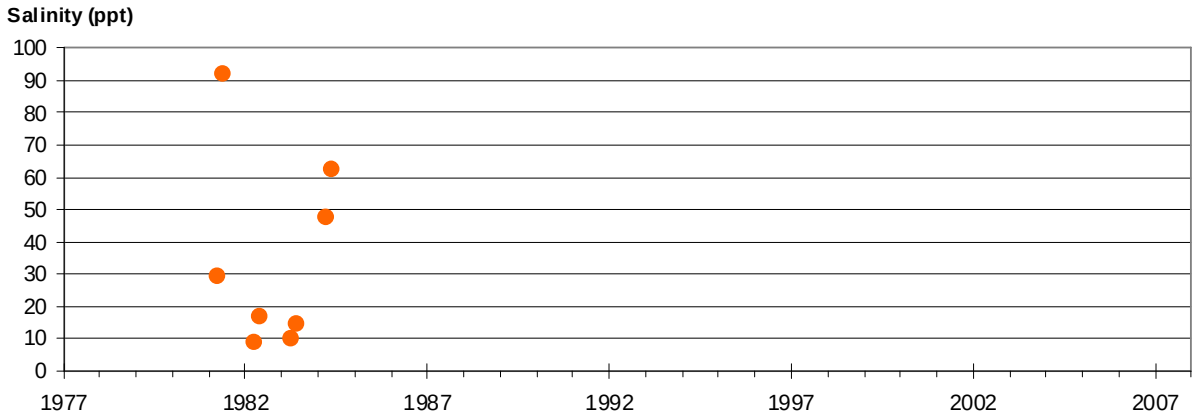


Mungala is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

MURAPIN (H)

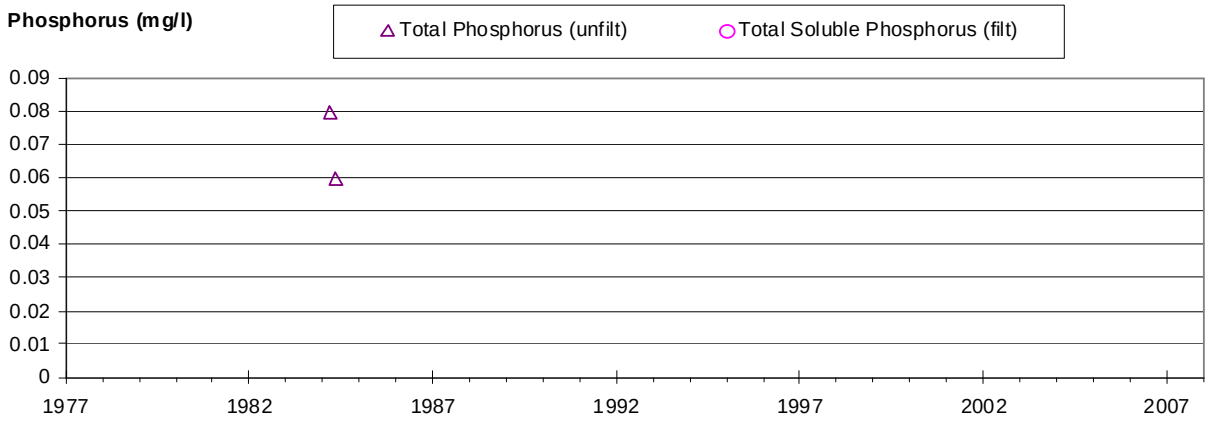


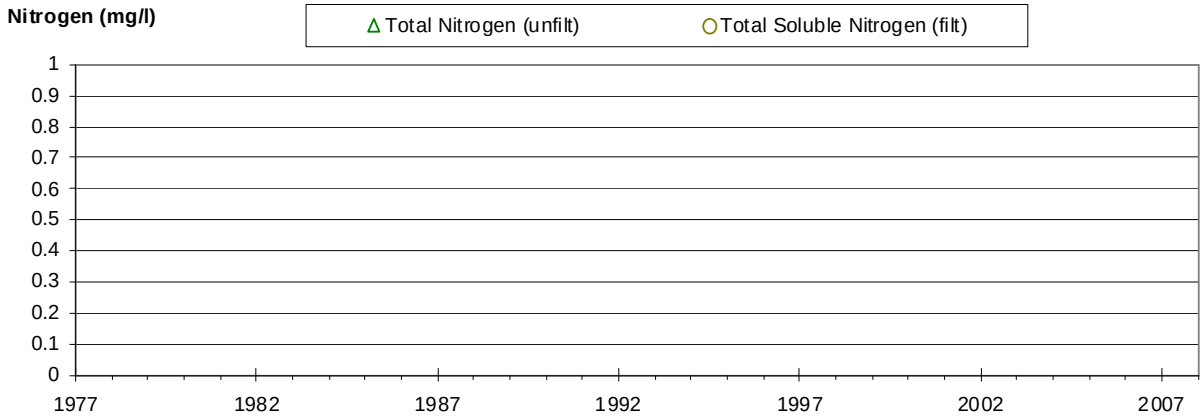




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

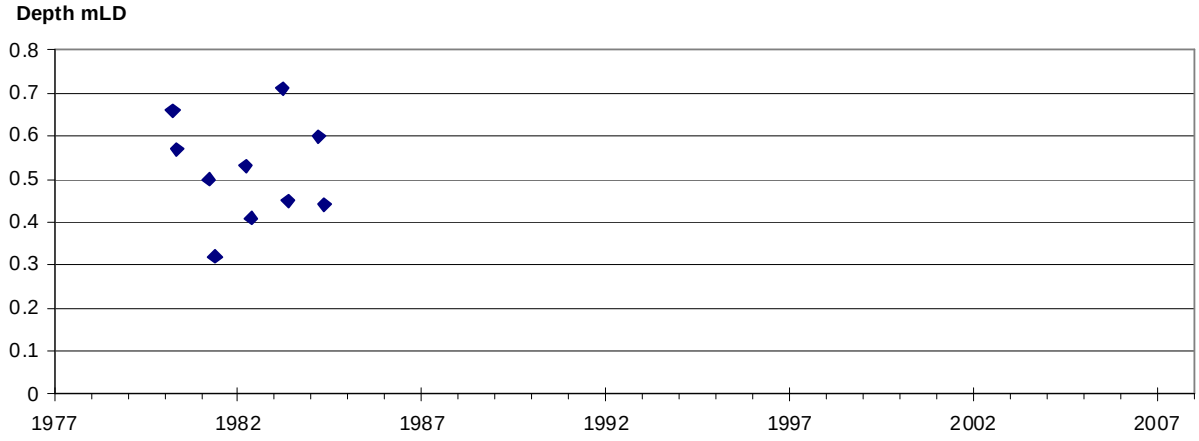
MURAPIN

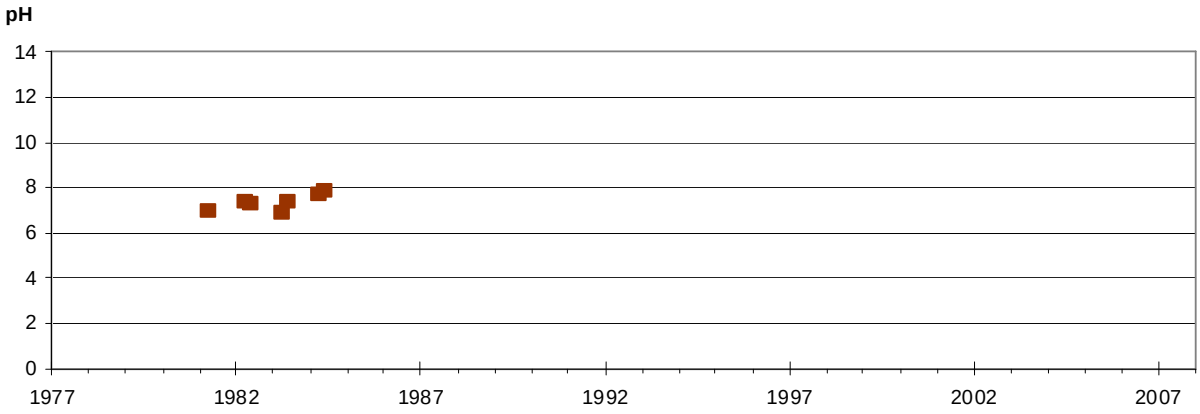


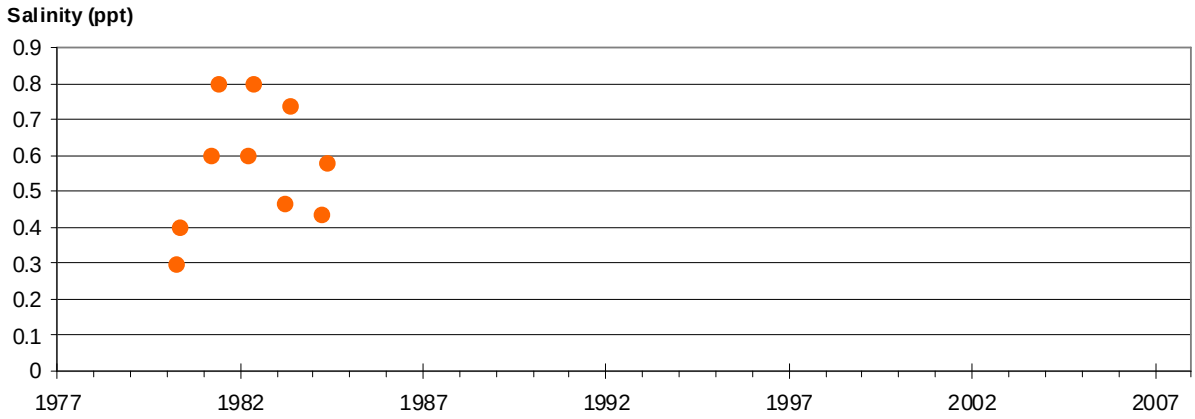


Murapin is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

MURRAY 24739 (H)







Notes:
1. Year labels are positioned at 1st July each year.
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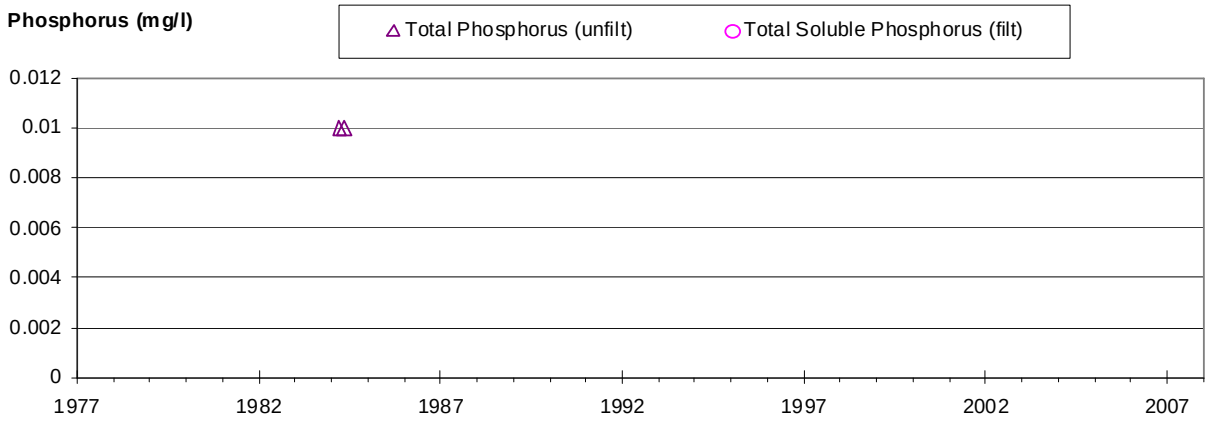
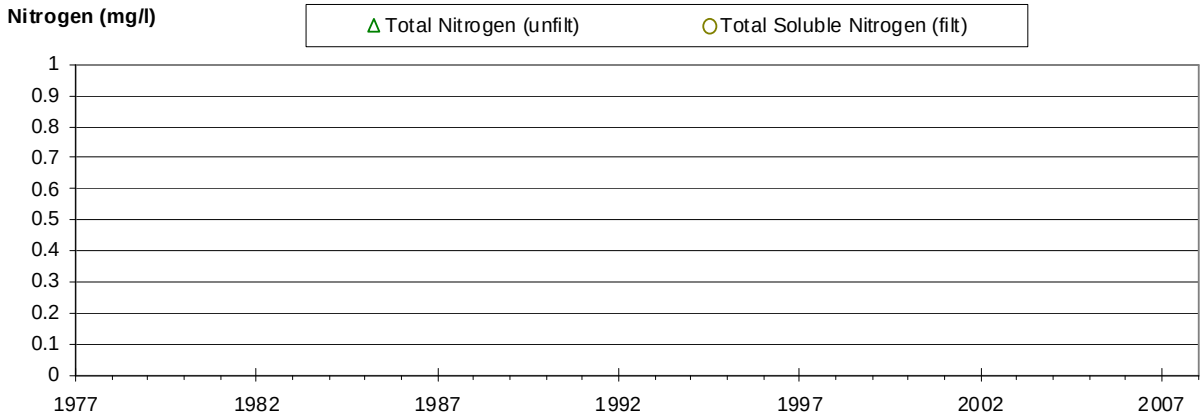
MURRAY 24739



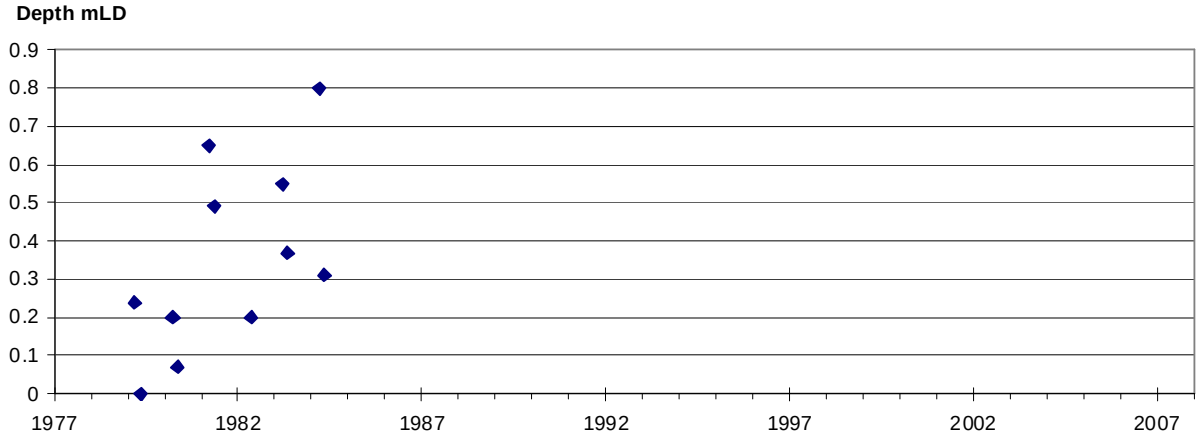


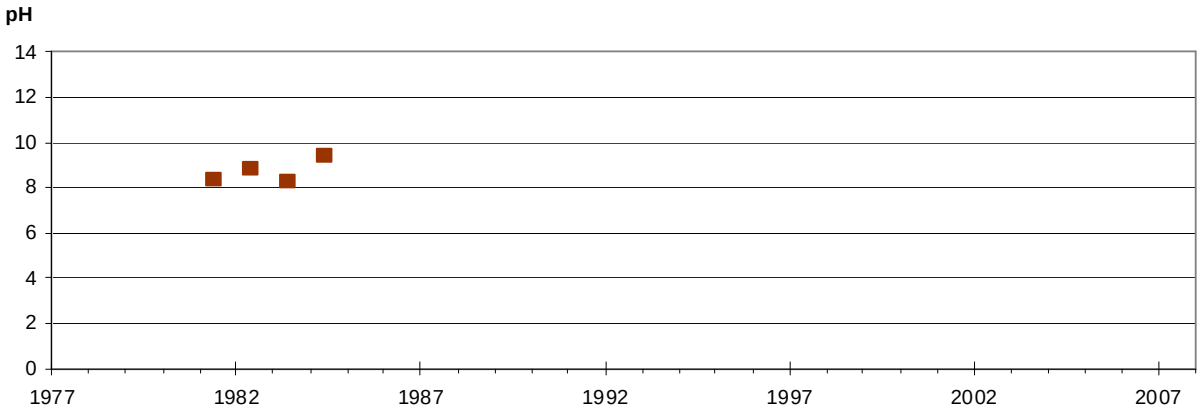
Murray 24739 is a component of the 'Peel-Yalgorup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

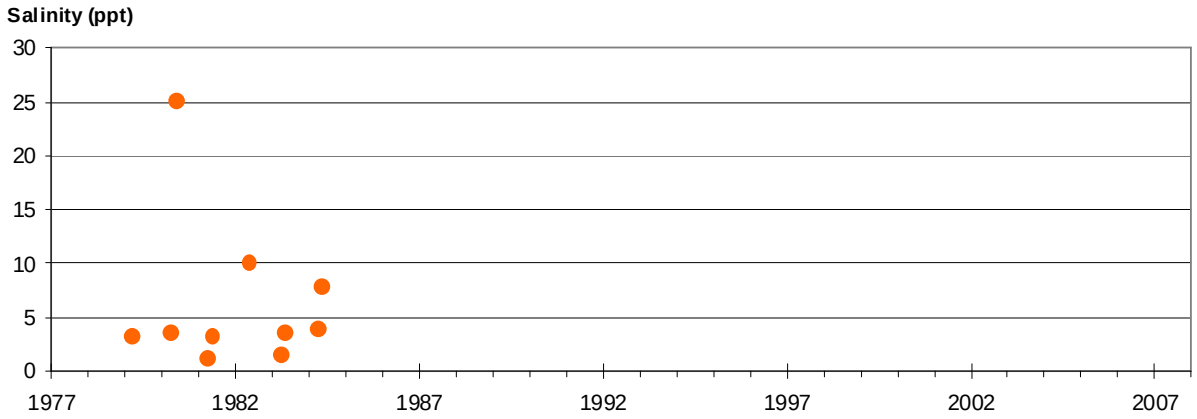
Murray 24739 is also a component of the 'Lake McLarty System', which is listed in the 'Directory of Important Wetlands in Australia'.

Murray 24739 is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

NAMBUNG (H)







Notes:
1. Year labels are positioned at 1st July each year.
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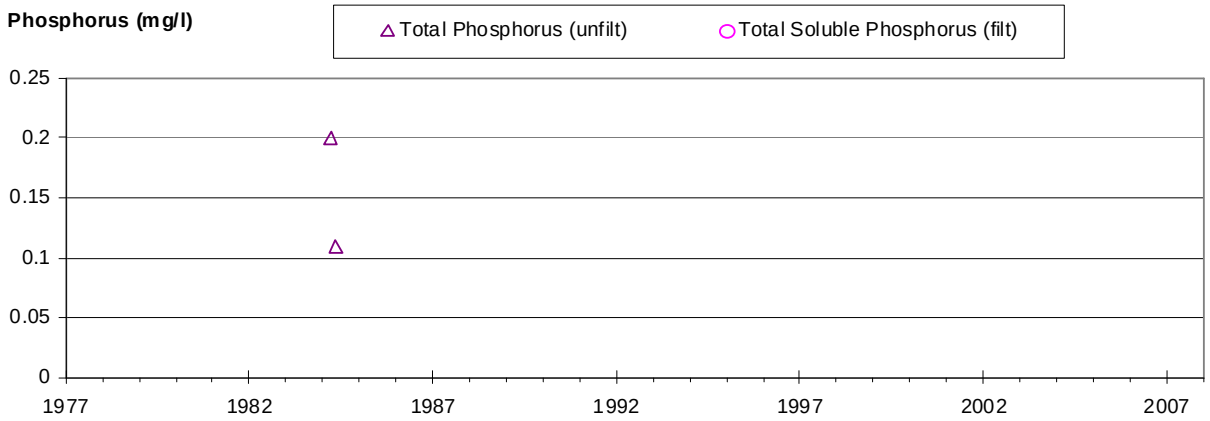
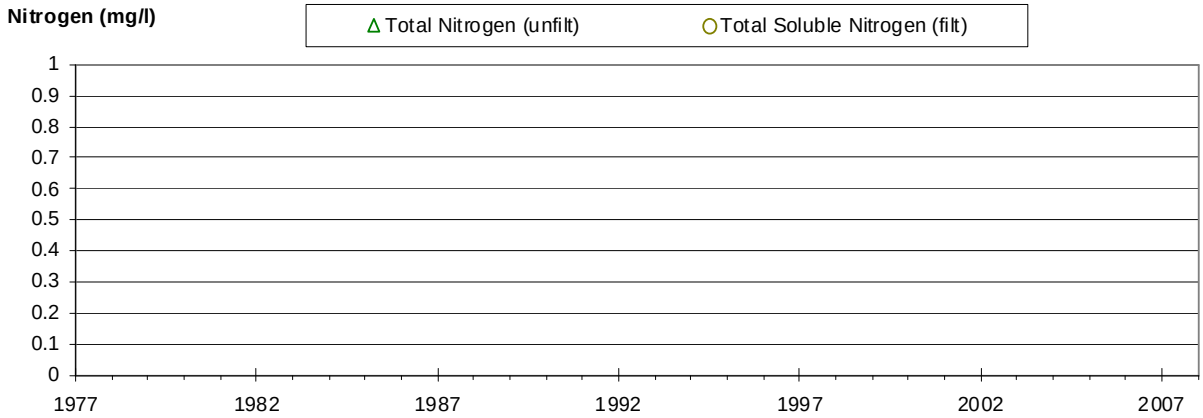
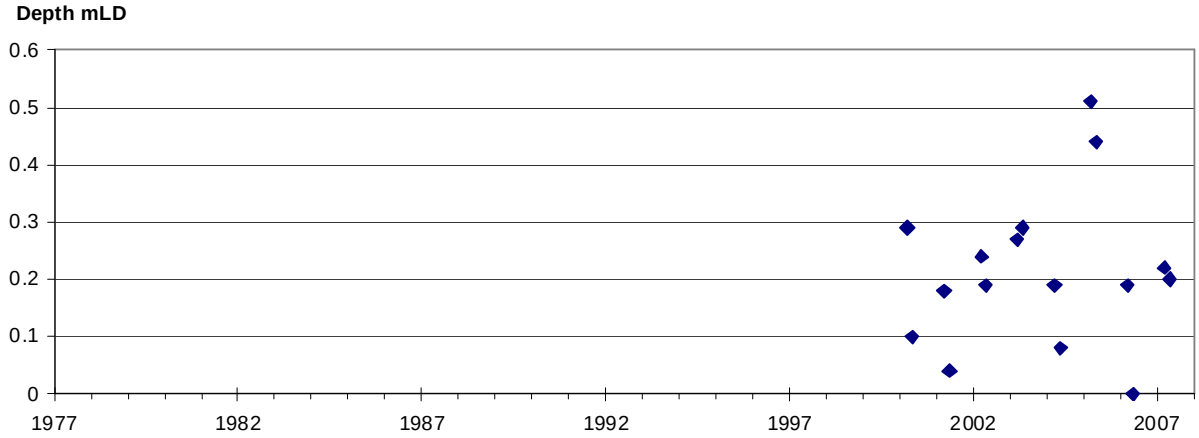
NAMBUNG

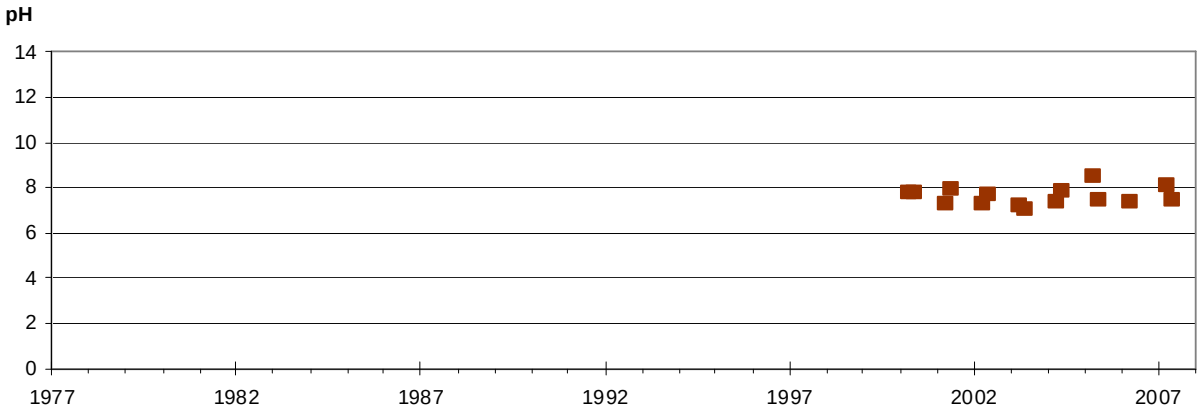


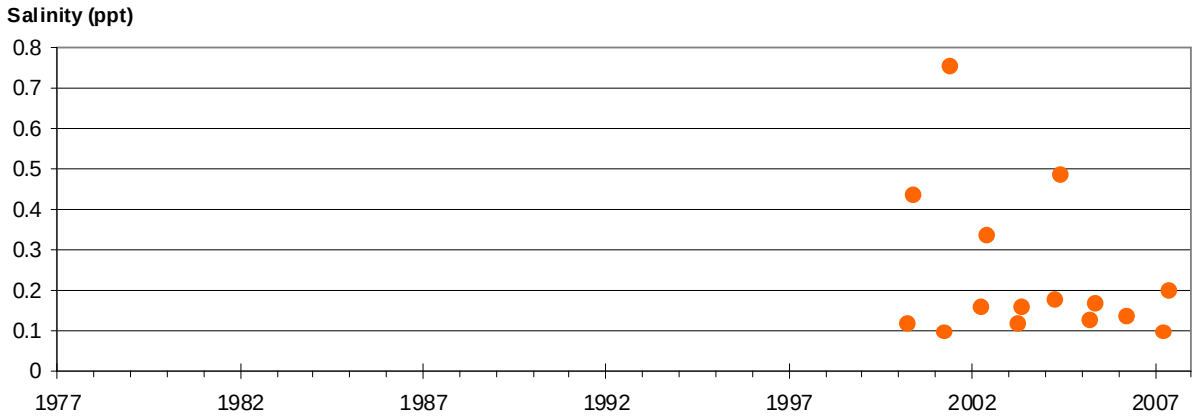


Nambung is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

NGOPITCHUP (C)







Notes:
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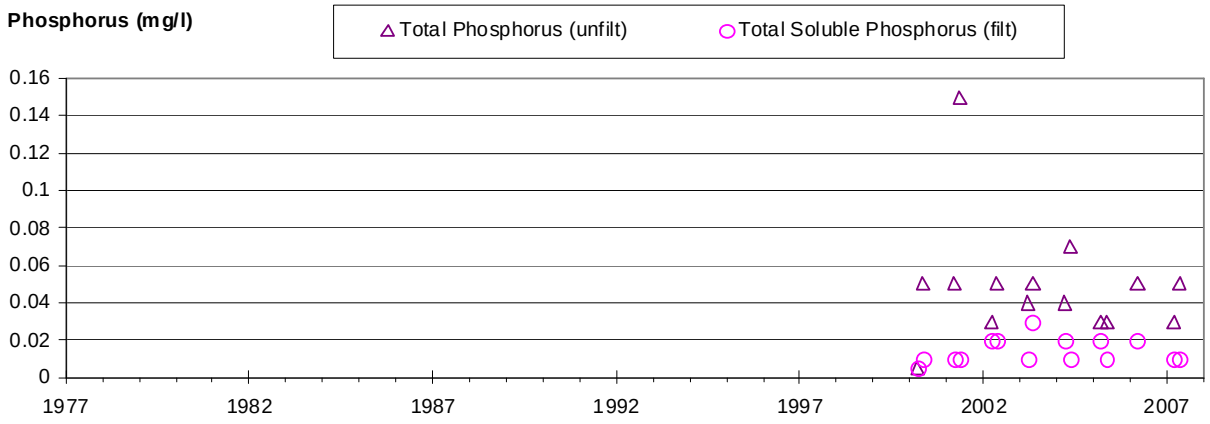
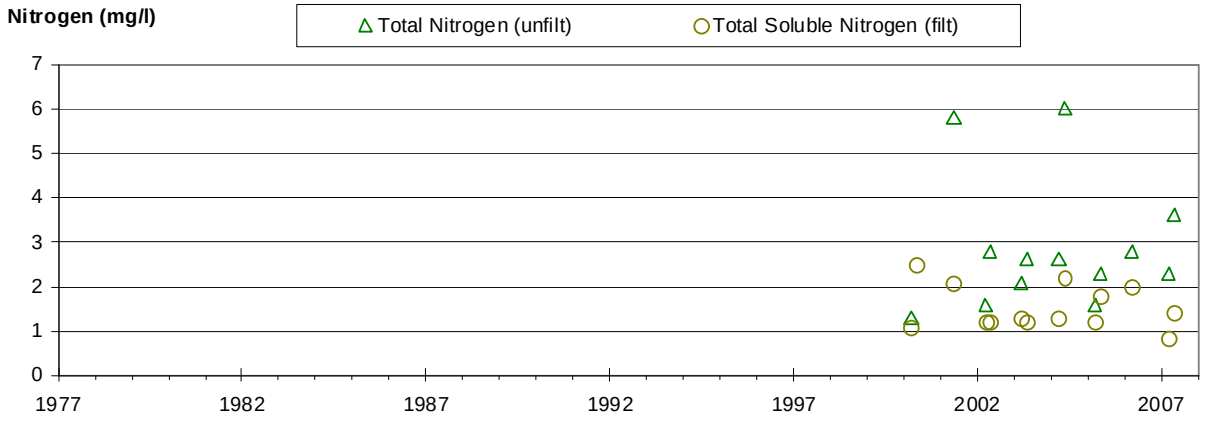
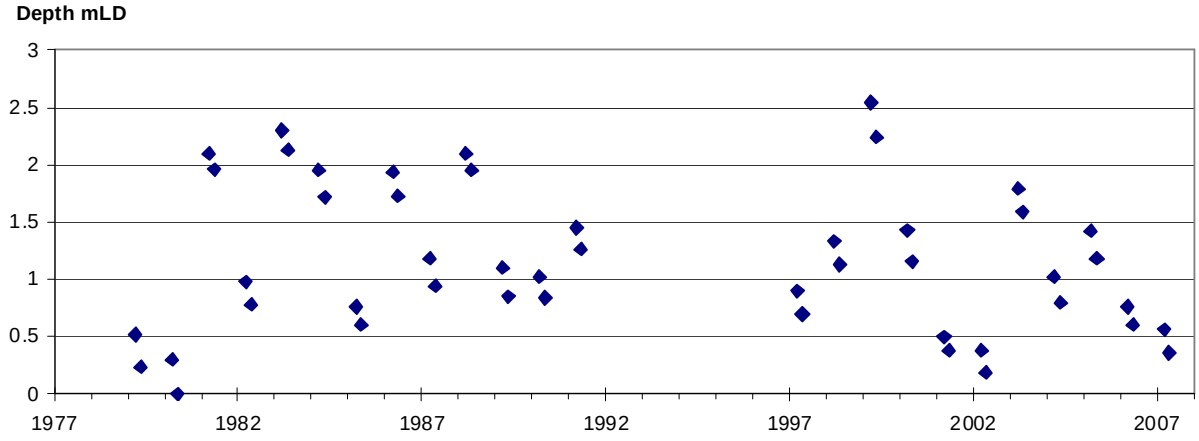
NGOPITCHUP

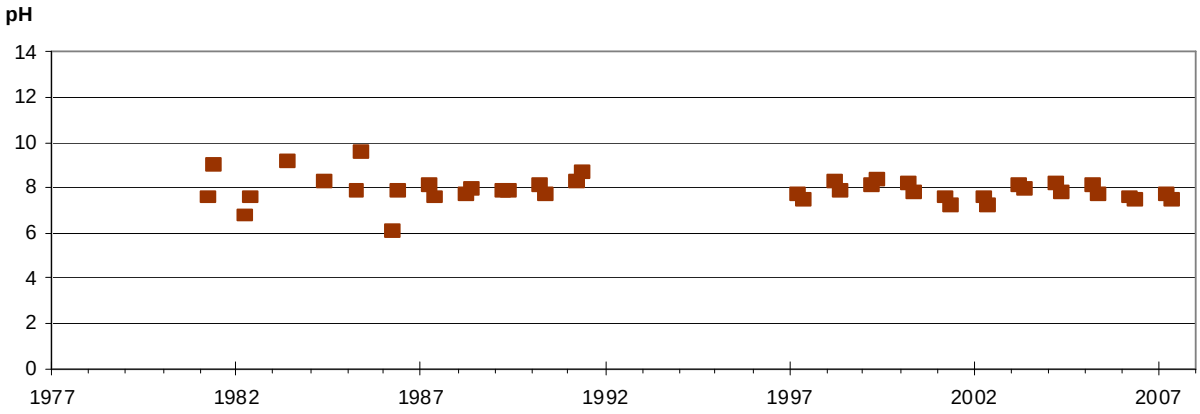


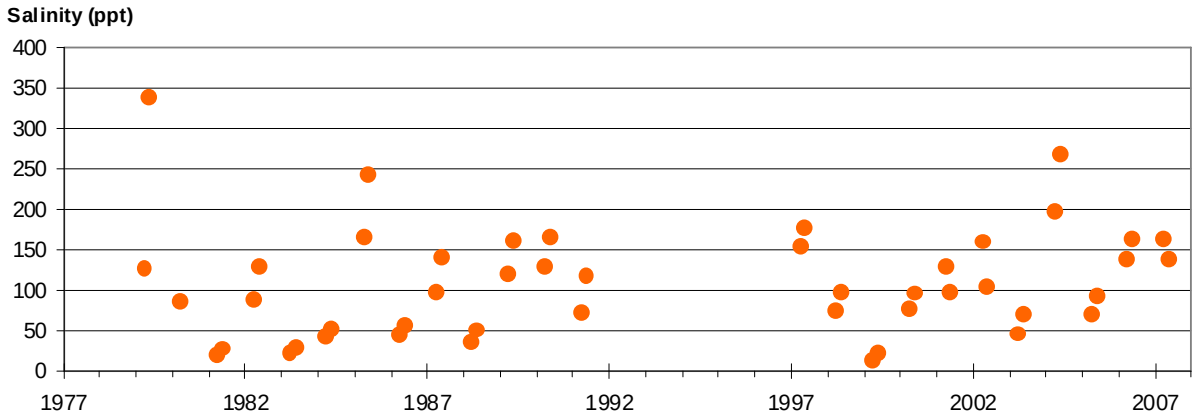


Ngopitchup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

NINAN (C)







Notes:
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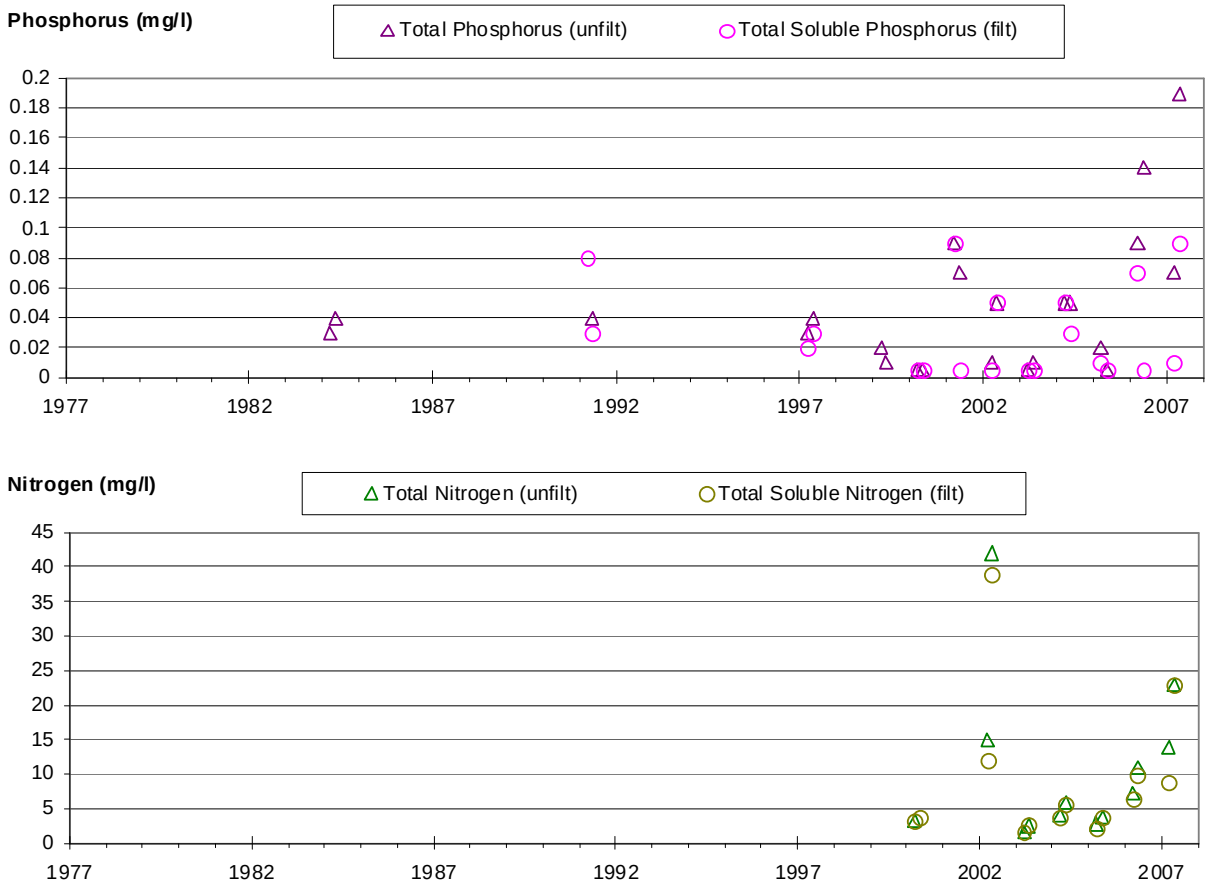
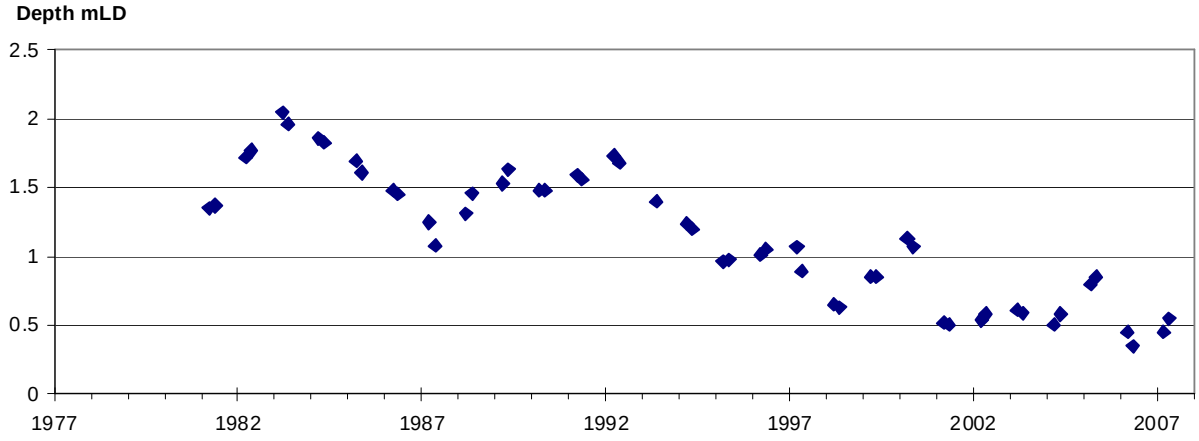
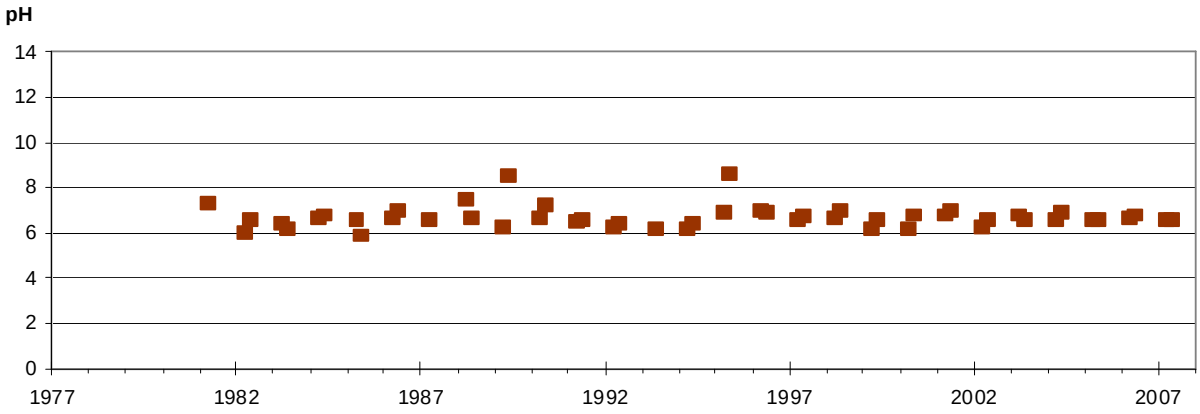
NINAN

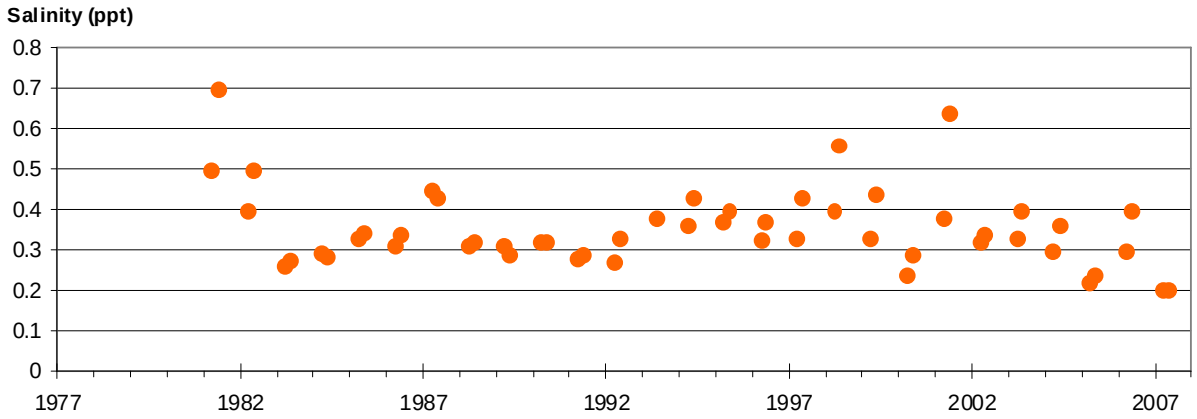


Ninan is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

NINE MILE (C)







Notes:
1. Year labels are positioned at 1st July each year.
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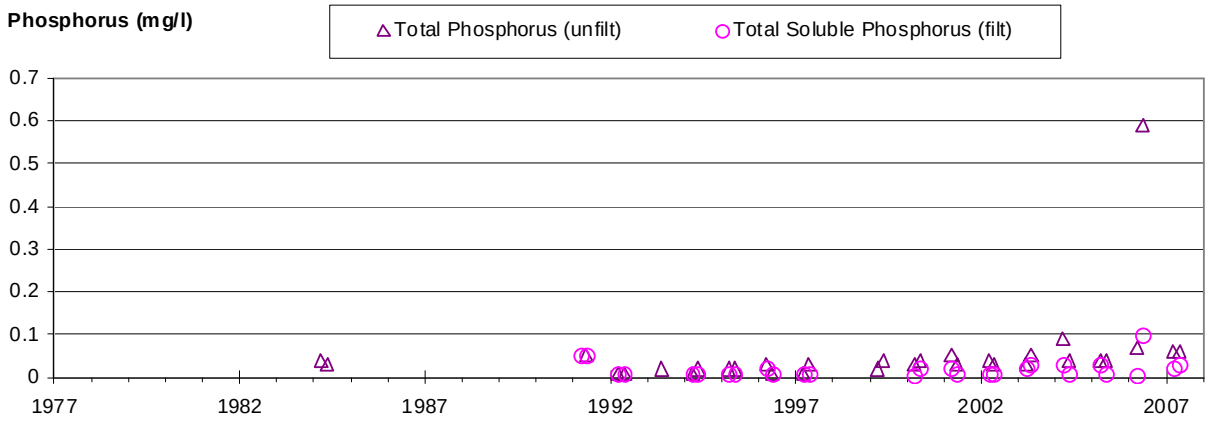
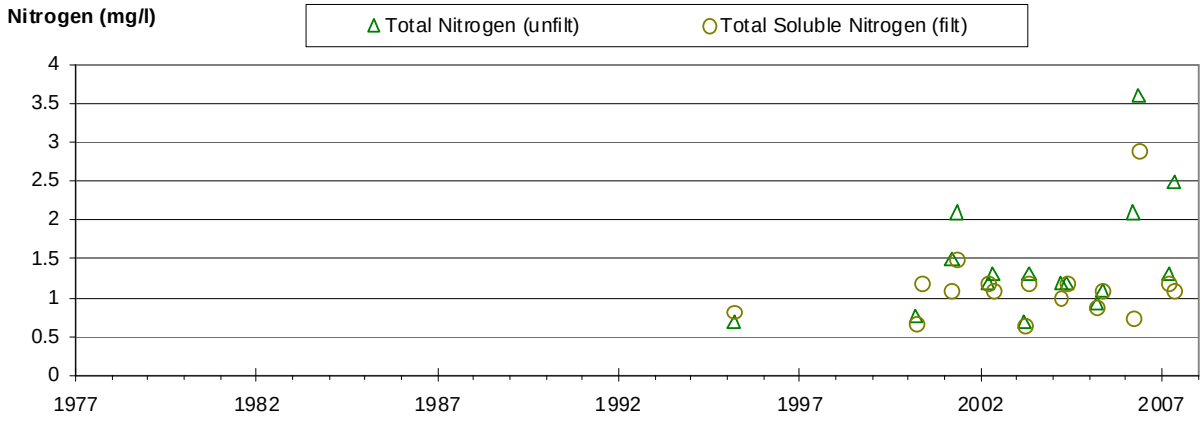
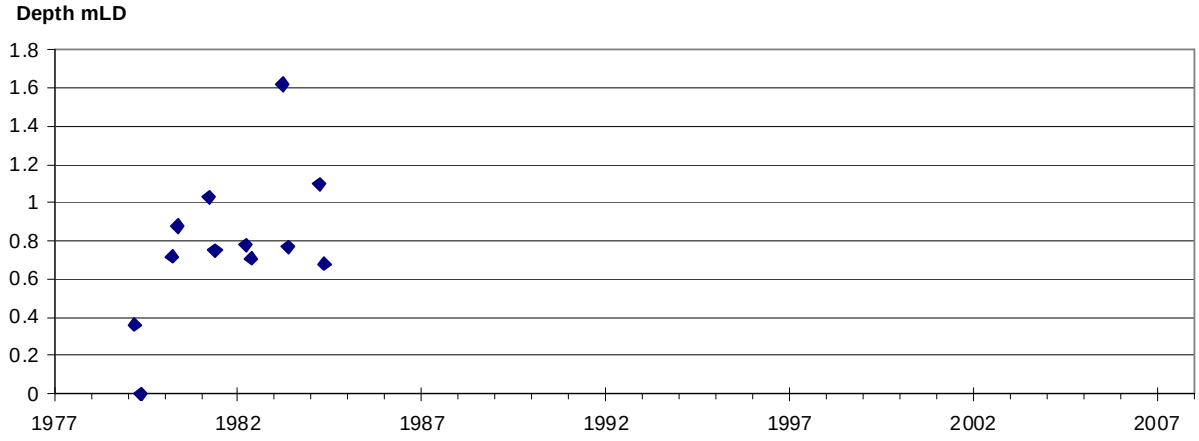
NINE MILE

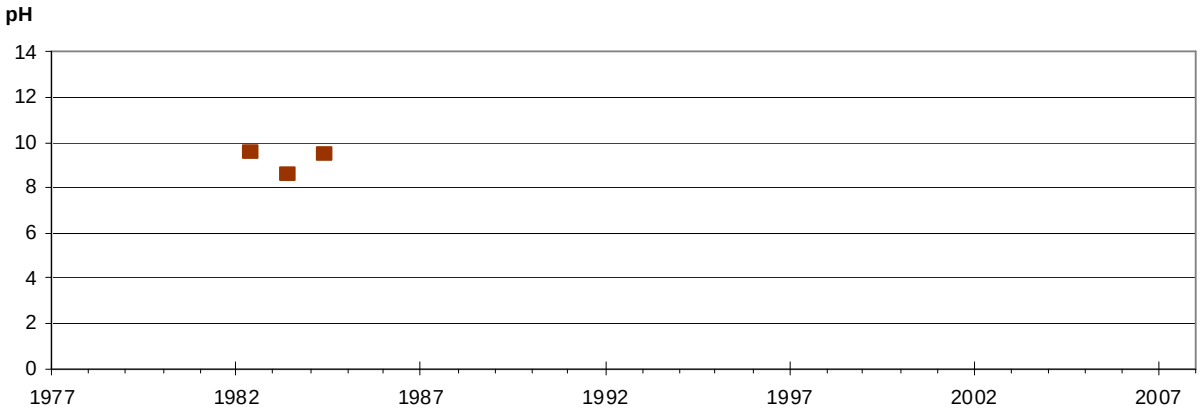


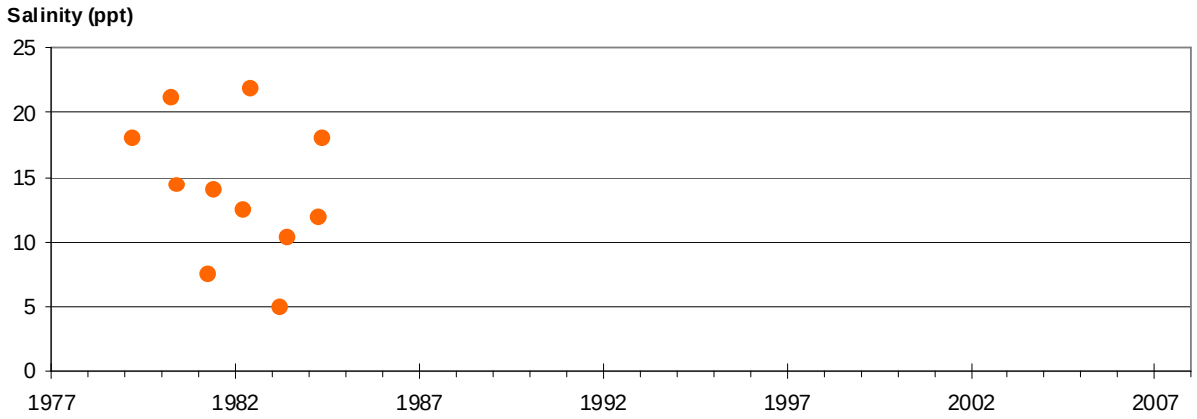


Nine Mile is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

NONALLING (H)







Notes:
1. Year labels are positioned at 1st July each year.
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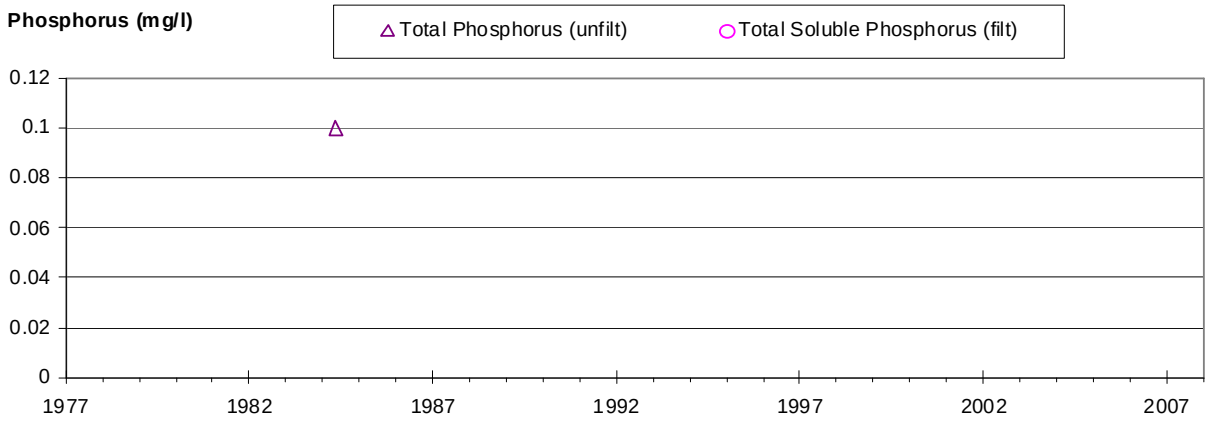
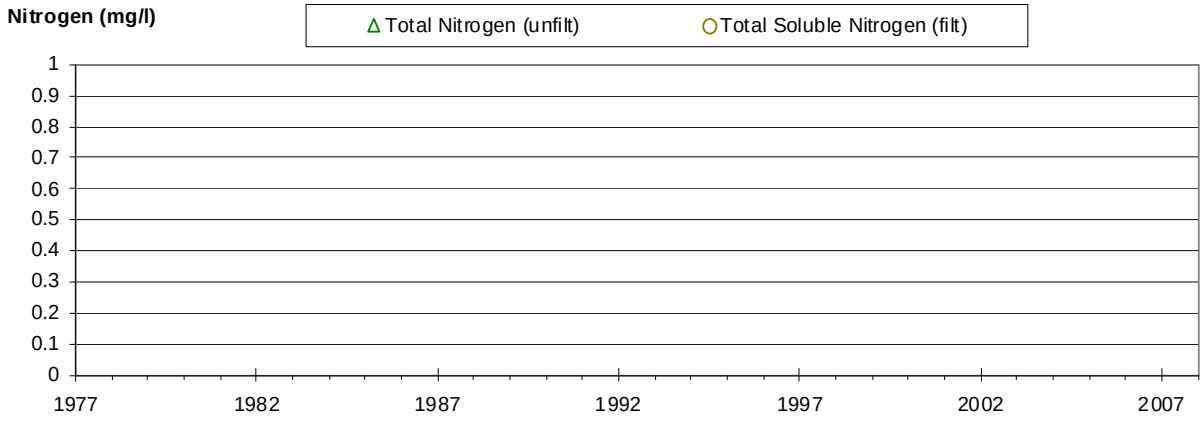
NONALLING

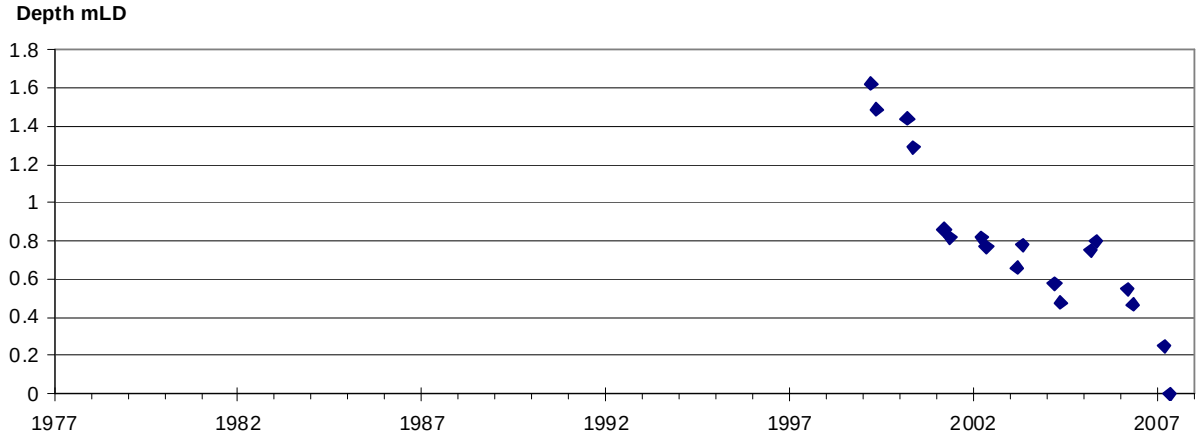


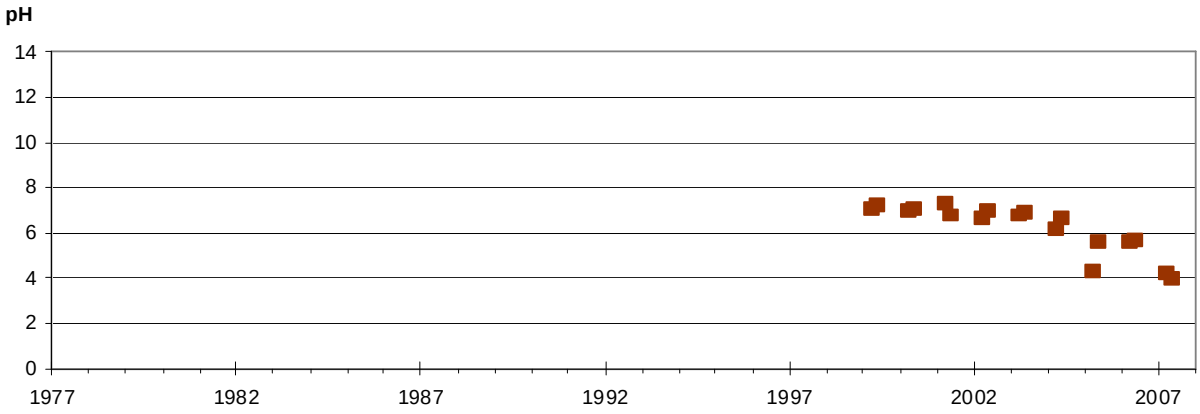


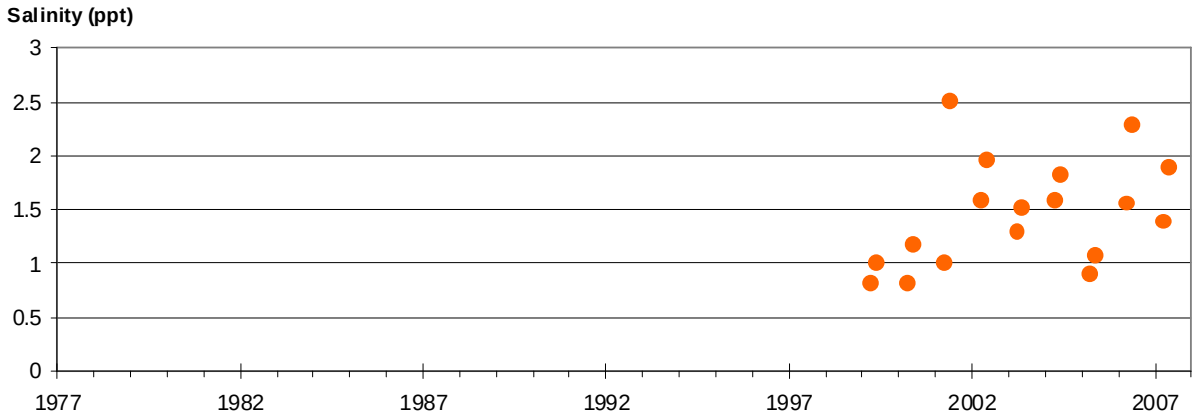
Nonalling is a component of the 'Yealering Lakes System', which is listed in the 'Directory of Important Wetlands in Australia'.

Nonalling is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

NOOBIJUP (C, IM)







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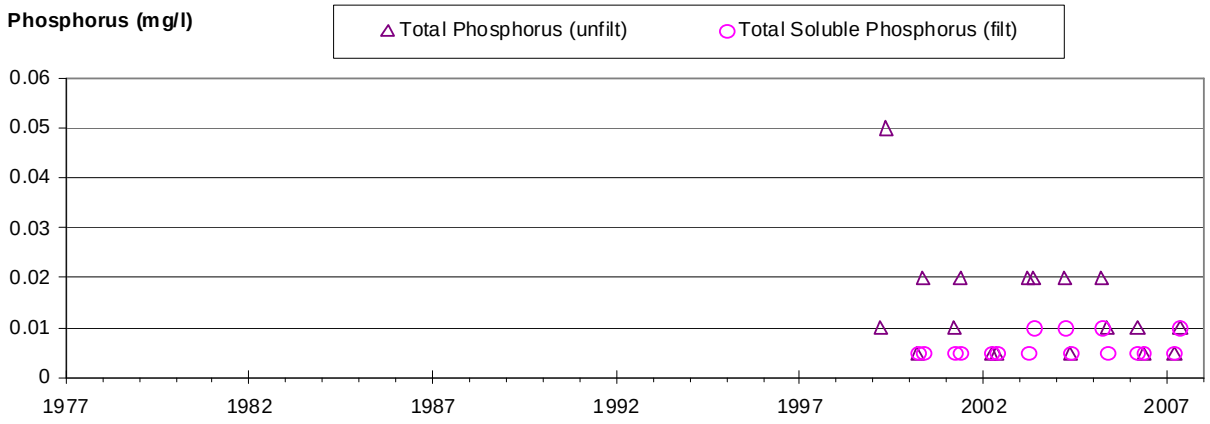
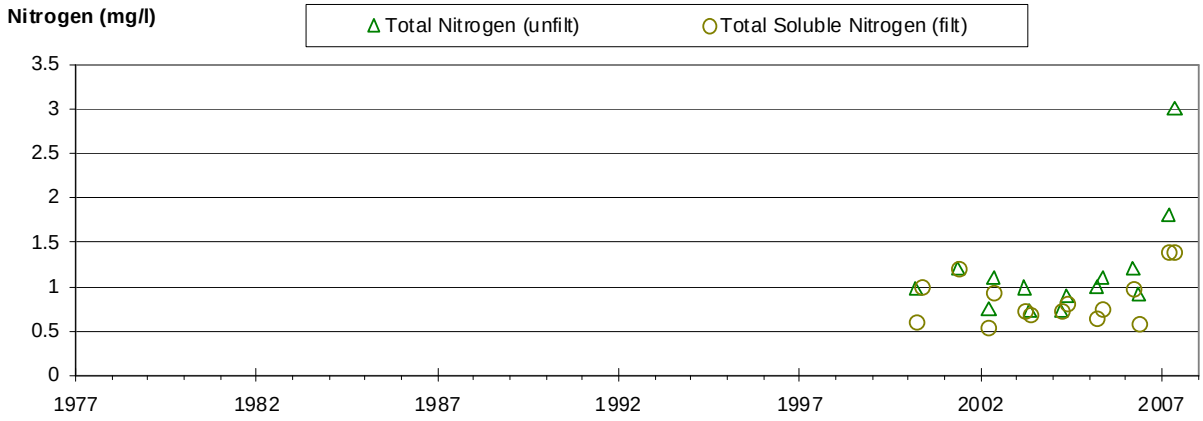
NOOBIJUP



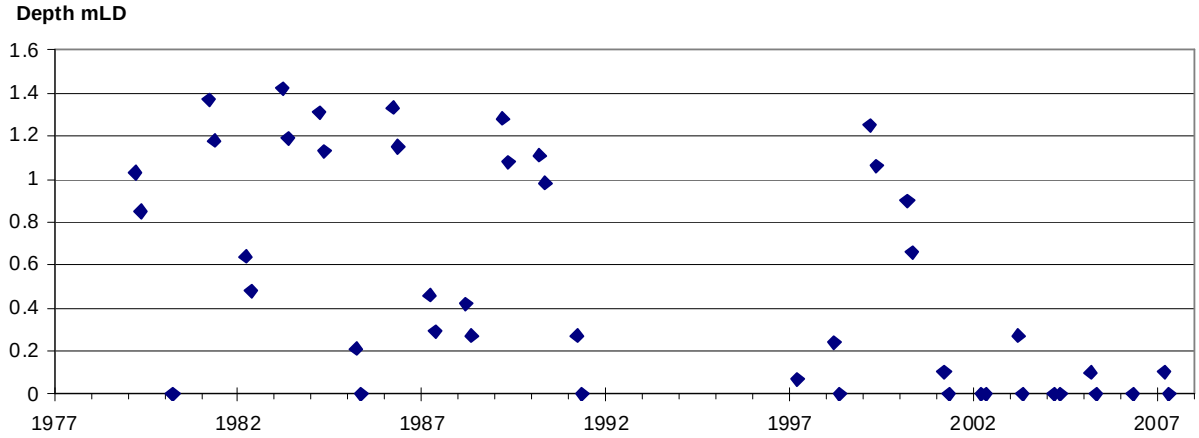


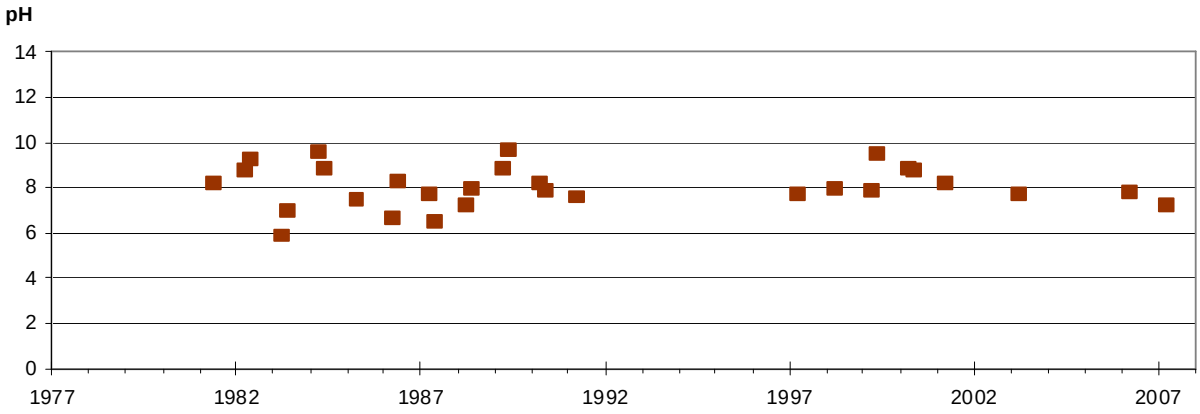
Noobijup is a component of the 'Byenup Lagoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

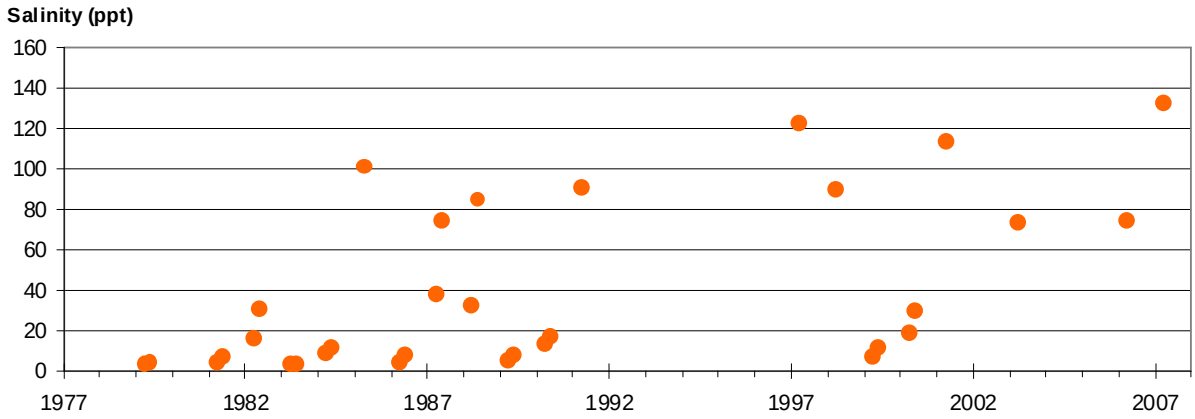
Noobijup is within the Muir-Unicup Natural Diversity Recovery Catchment.

Noobijup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

NOONYING (C)

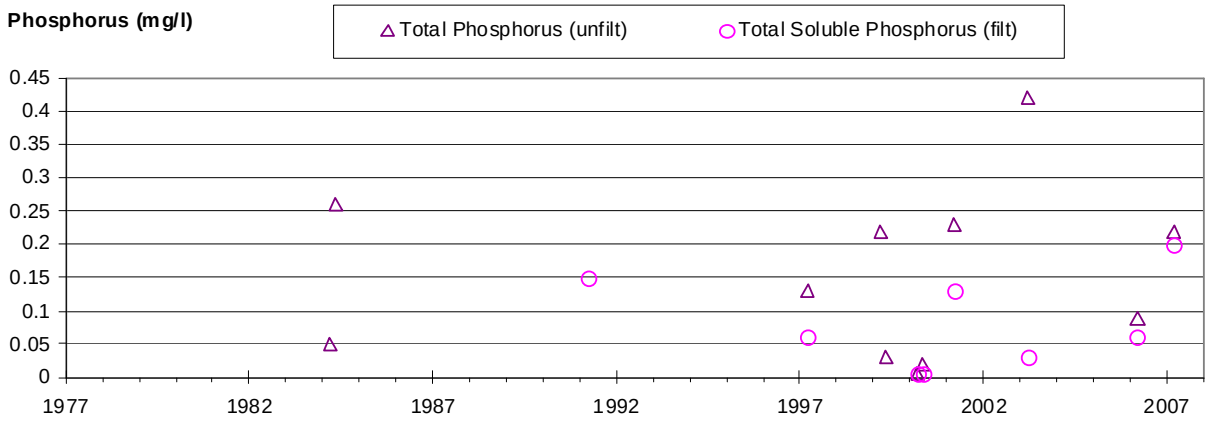


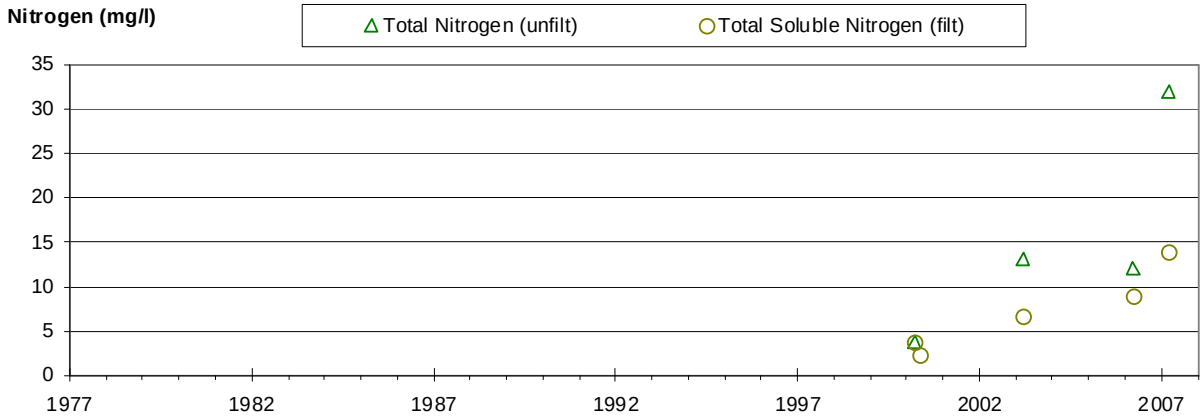




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

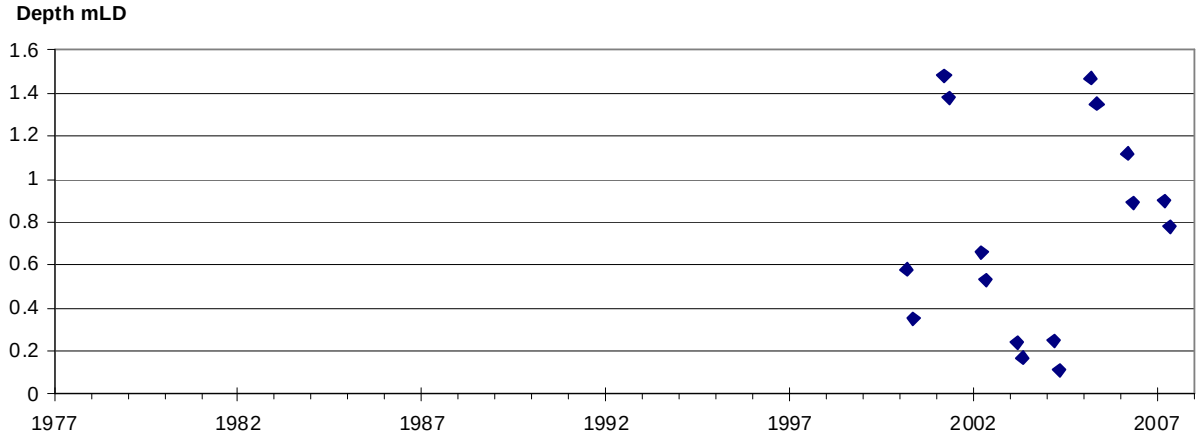
NOONYING

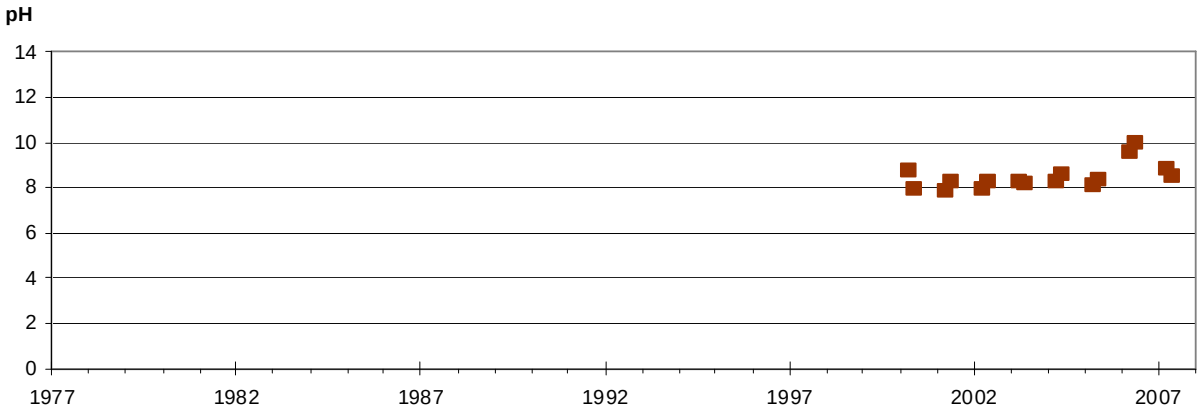


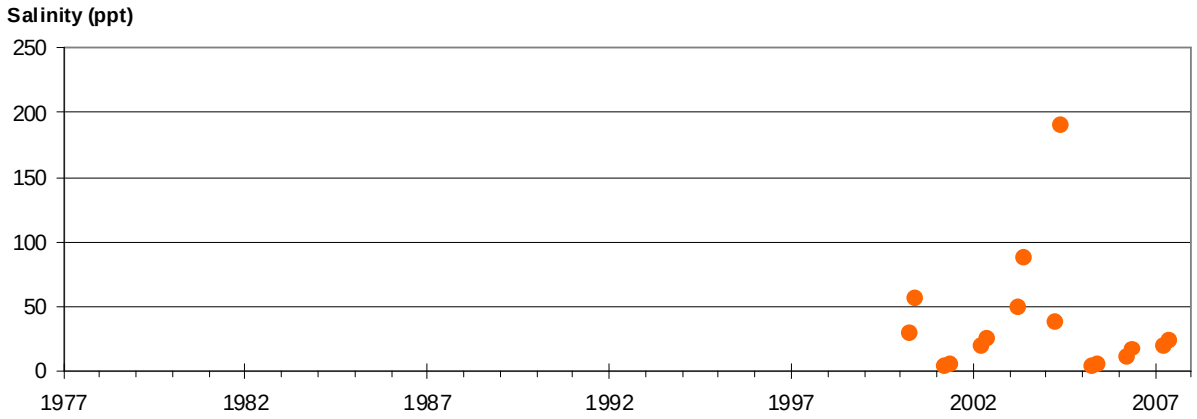


Noonying is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

NORTH PARRIUP (C)

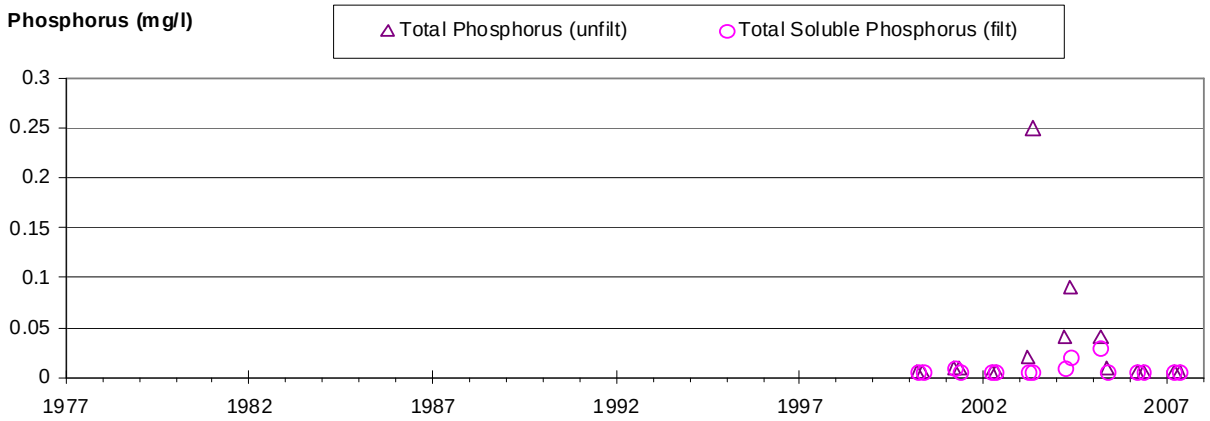


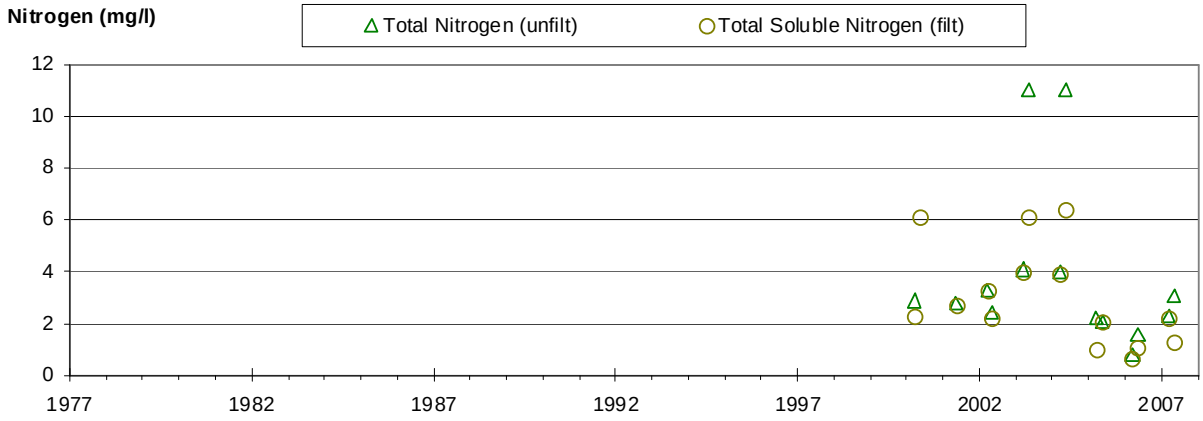




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

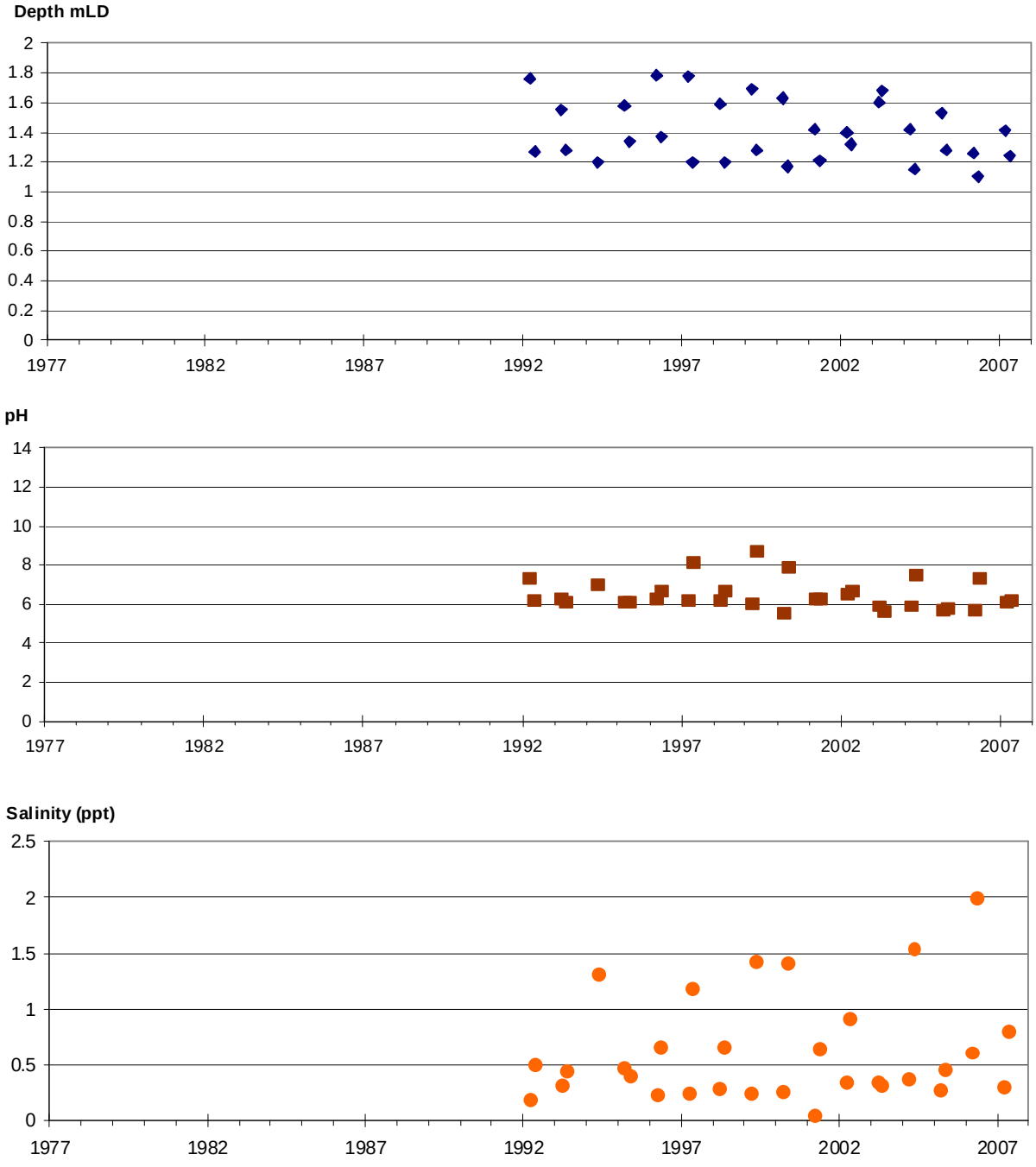
NORTH PARRIUP





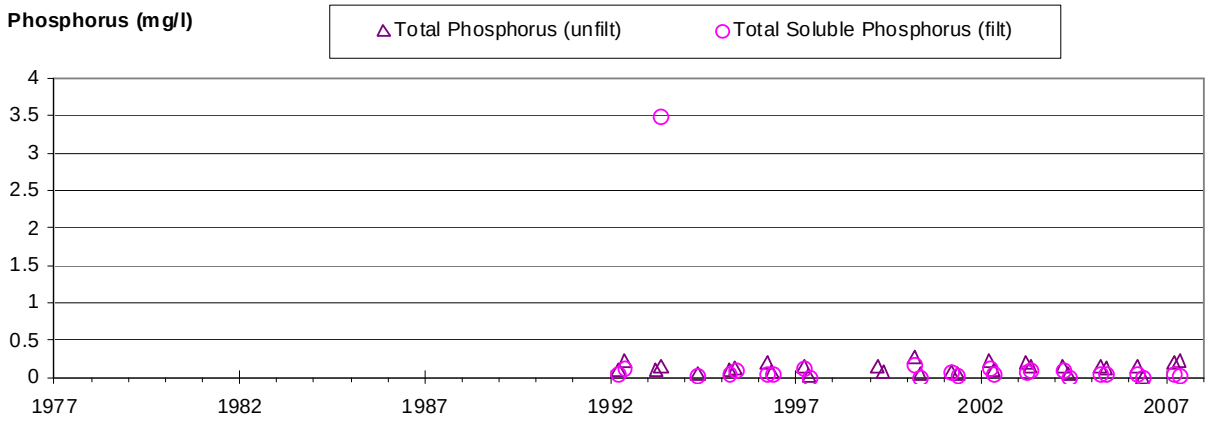
North Parriup is in the Esperance District of the South Coast DEC Region.

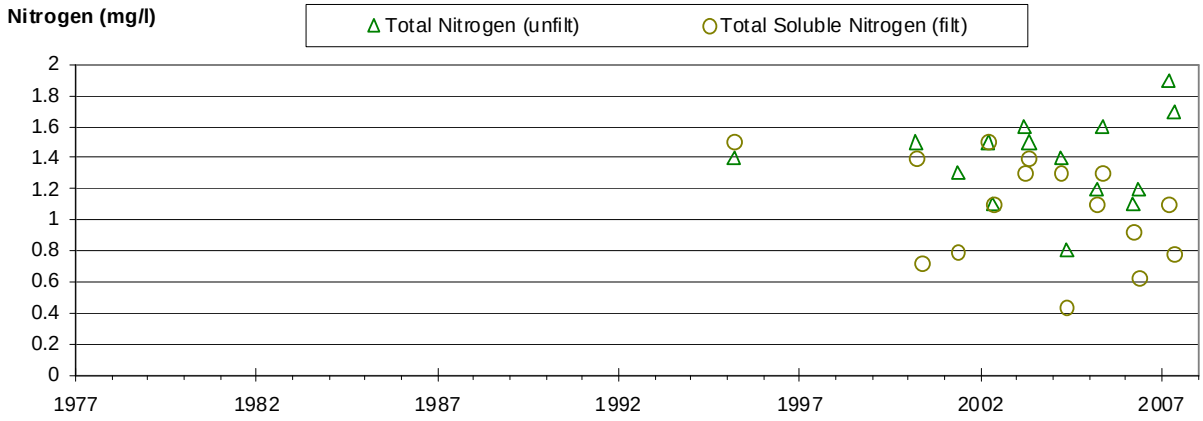
OWINGUP (C)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

OWINGUP

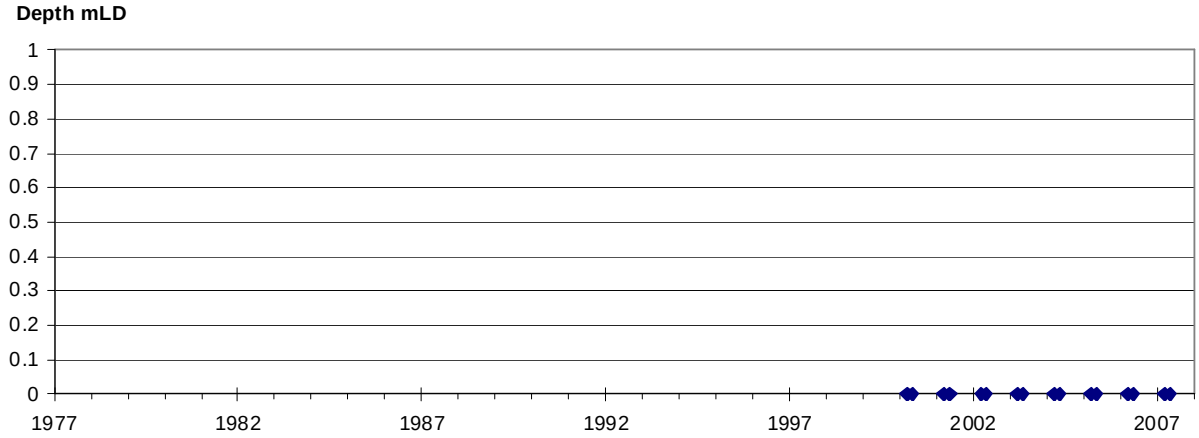


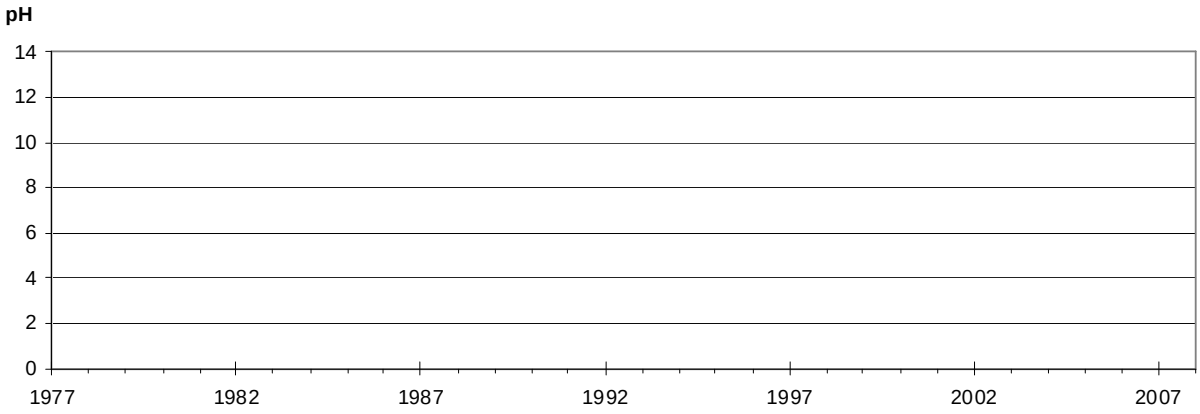


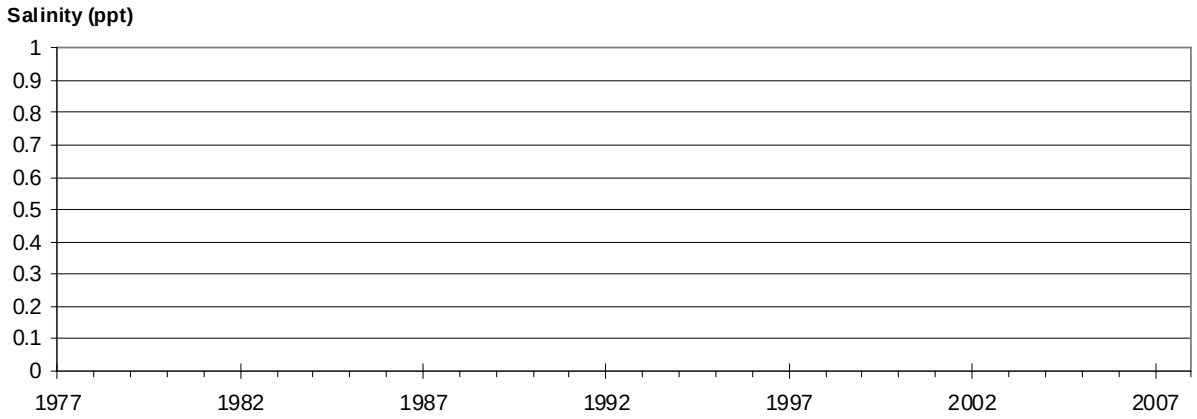
Owingup is a component of the 'Owingup Swamp System', which is listed in the 'Directory of Important Wetlands in Australia'.

Owingup is in the Frankland District (headquartered in Walpole) of the Warren DEC Region.

PABELUP SOUTH (C)

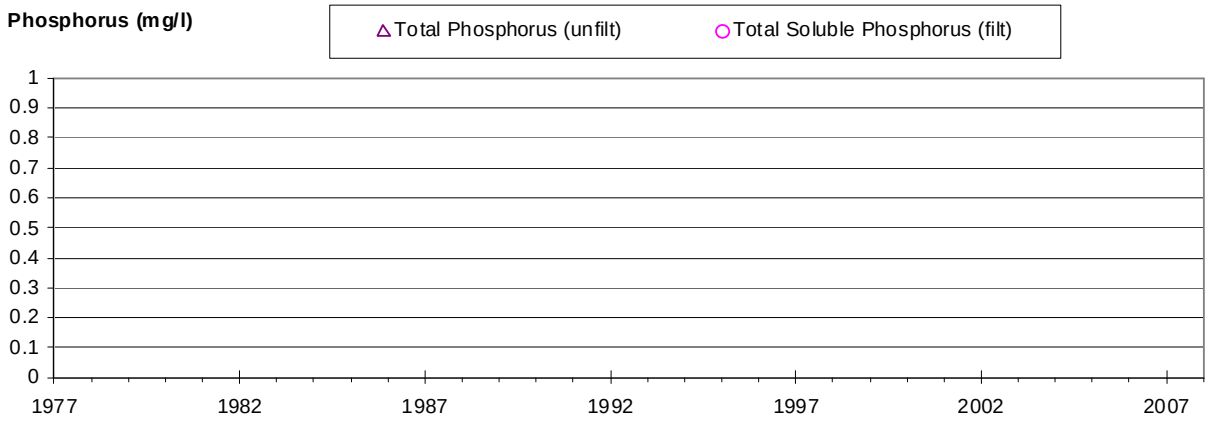


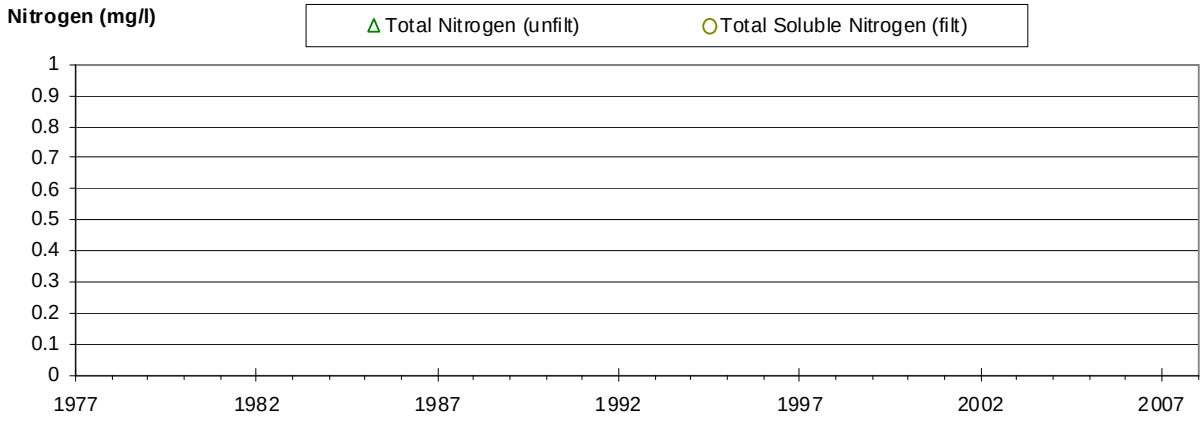




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

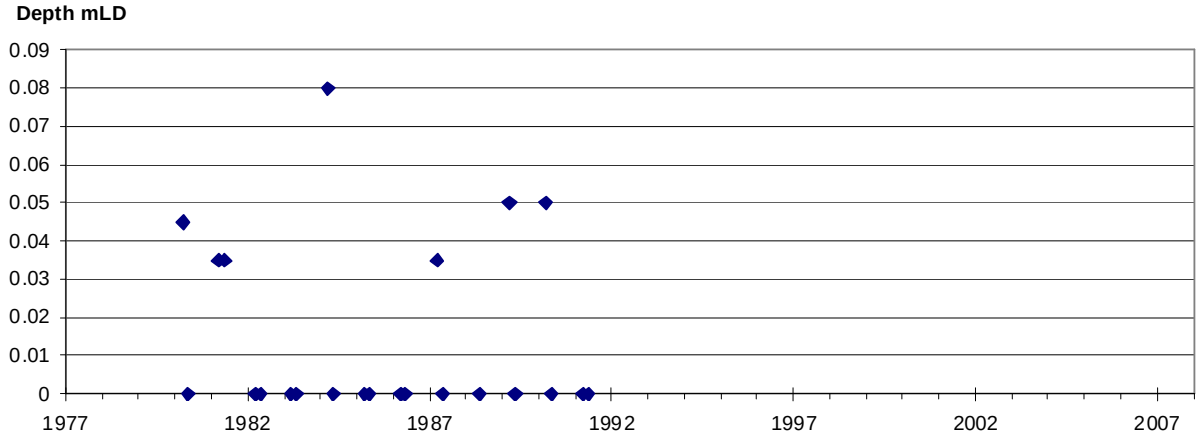
PABELUP SOUTH

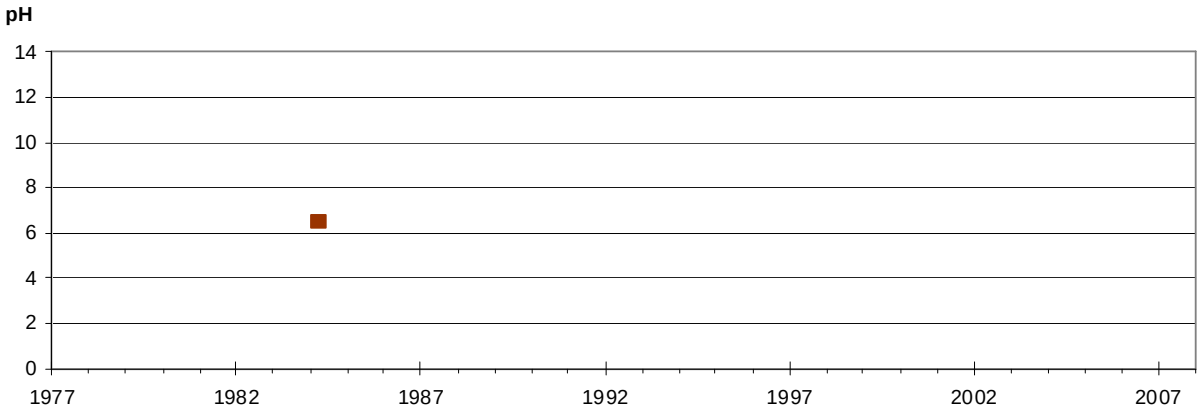


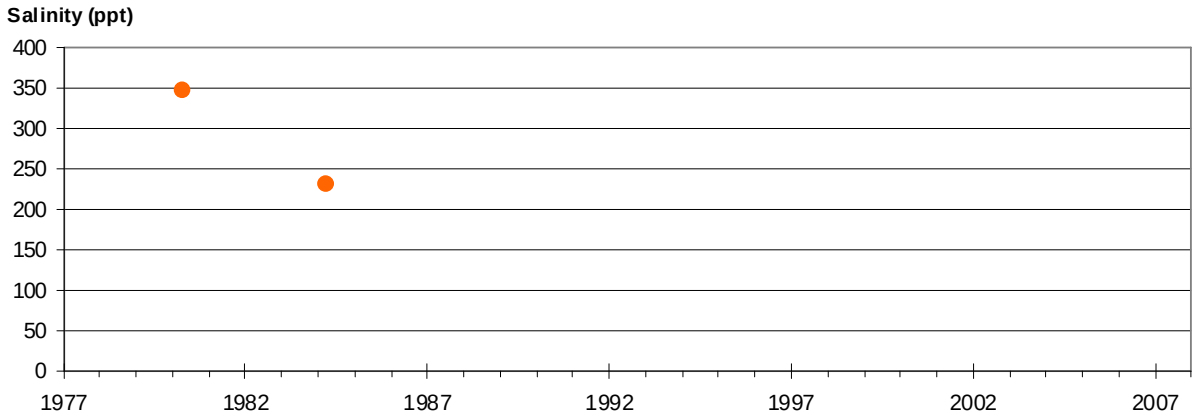


Pabelup South is in the Albany District of the South Coast DEC Region

PALLARUP (H)

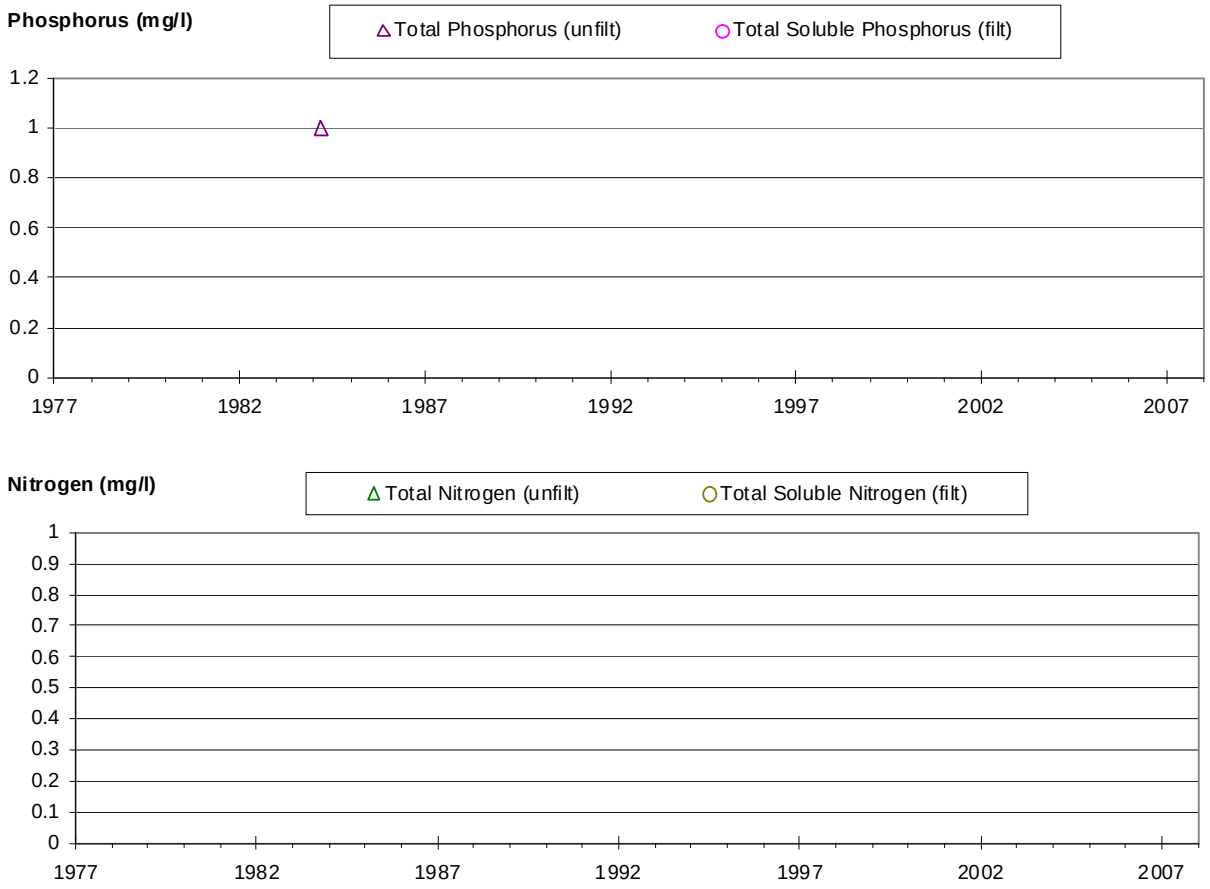






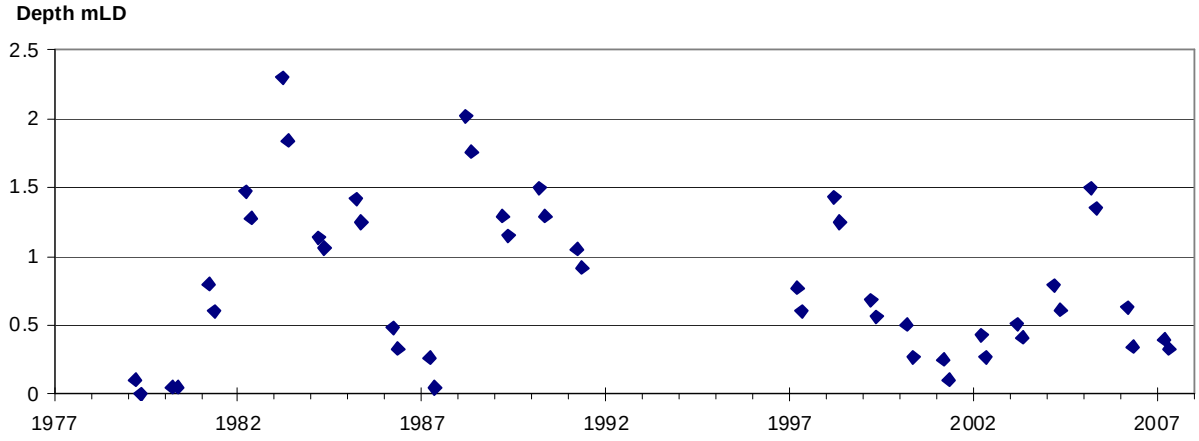
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

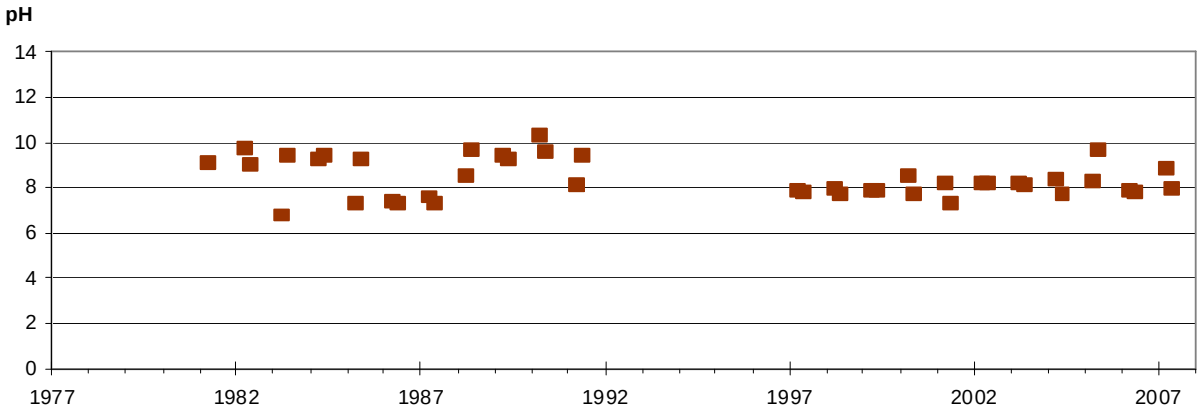
PALLARUP

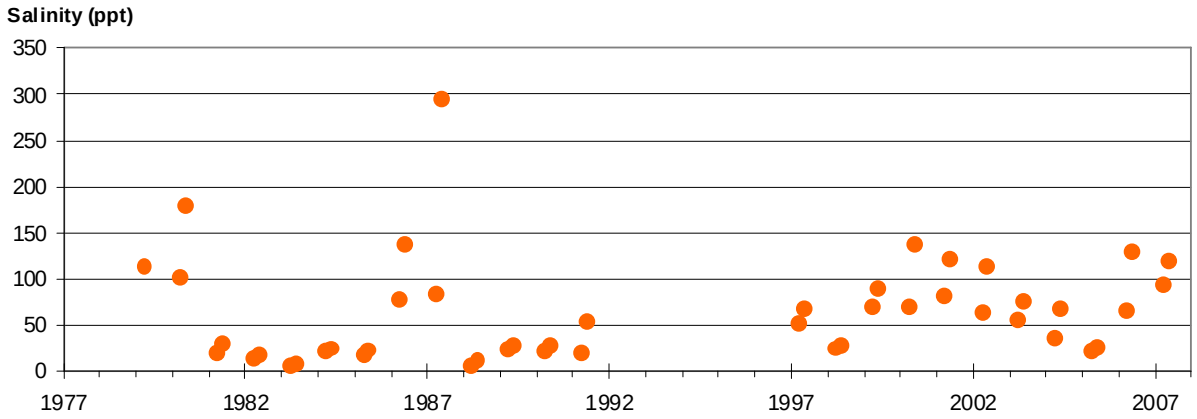


Pallarup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

PARKEYERRING (C, IM)

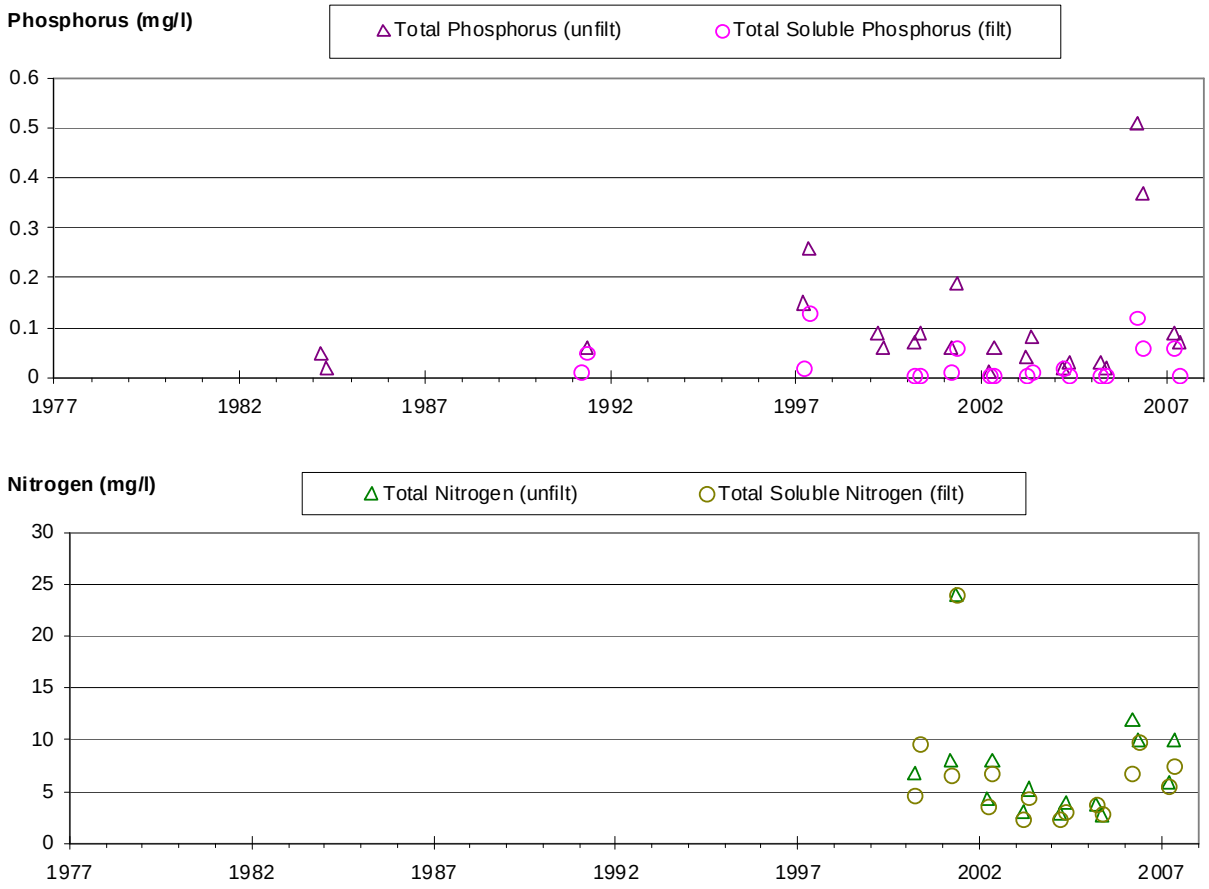






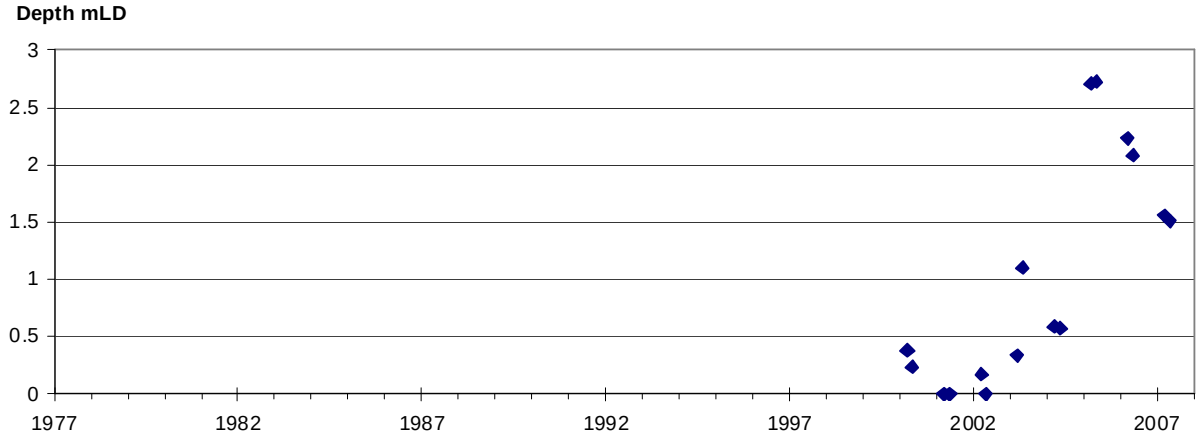
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

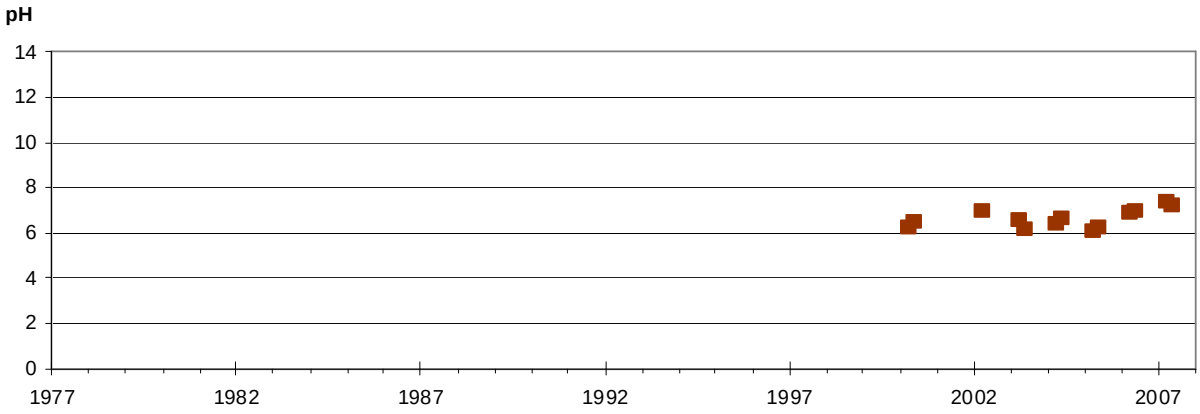
PARKEYERRING

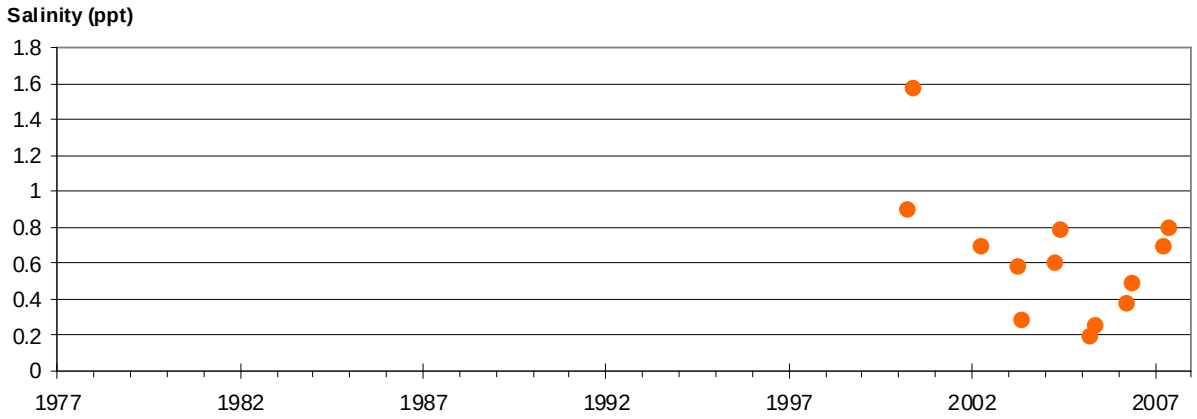


Parkeyerring is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

PILLENORUP (C)







Notes:
1. Year labels are positioned at 1st July each year.
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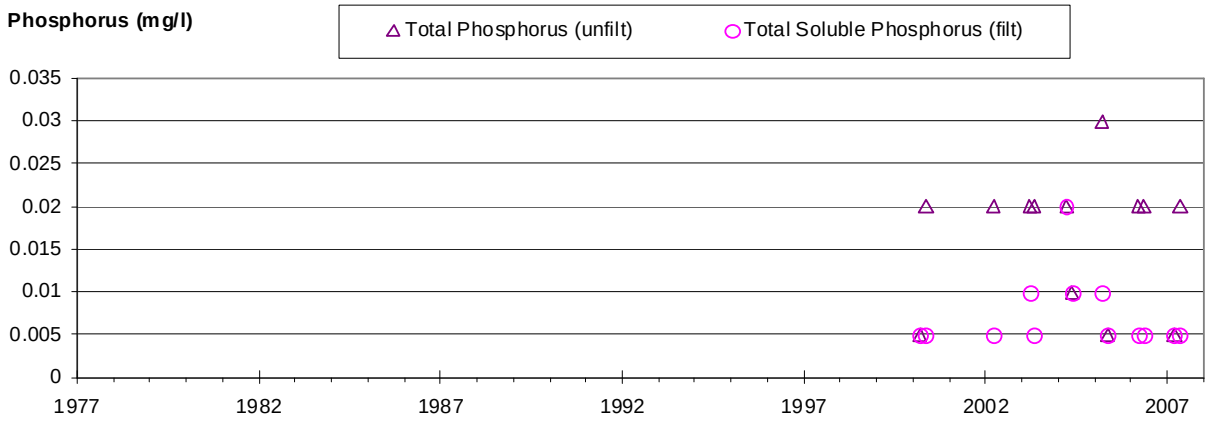
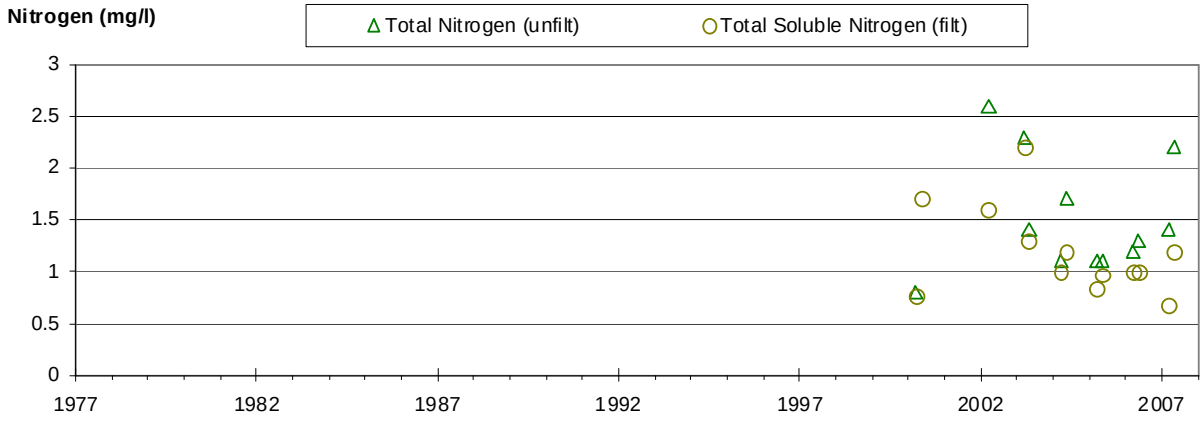
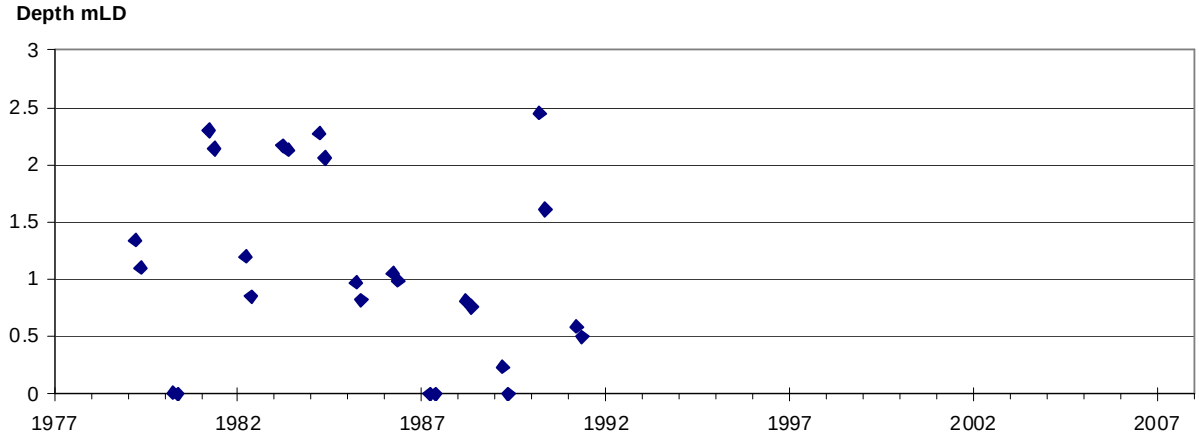
PILLENORUP

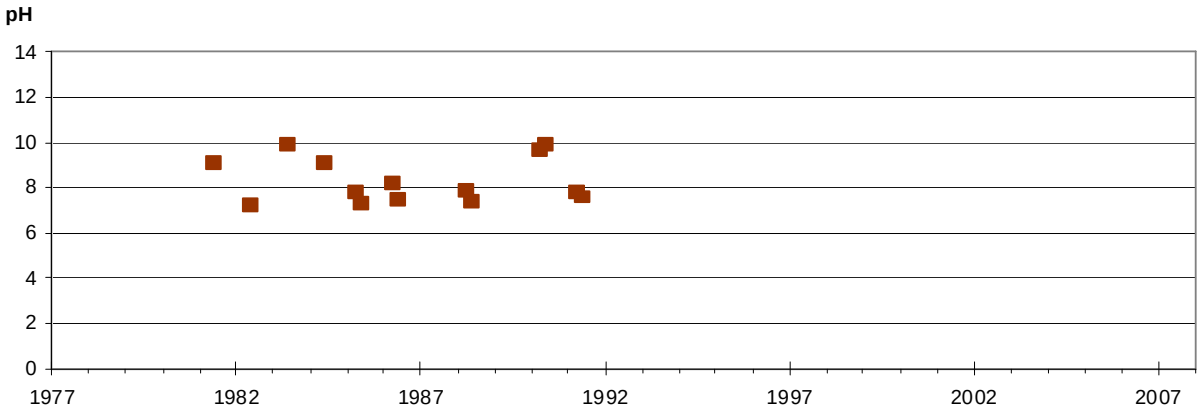


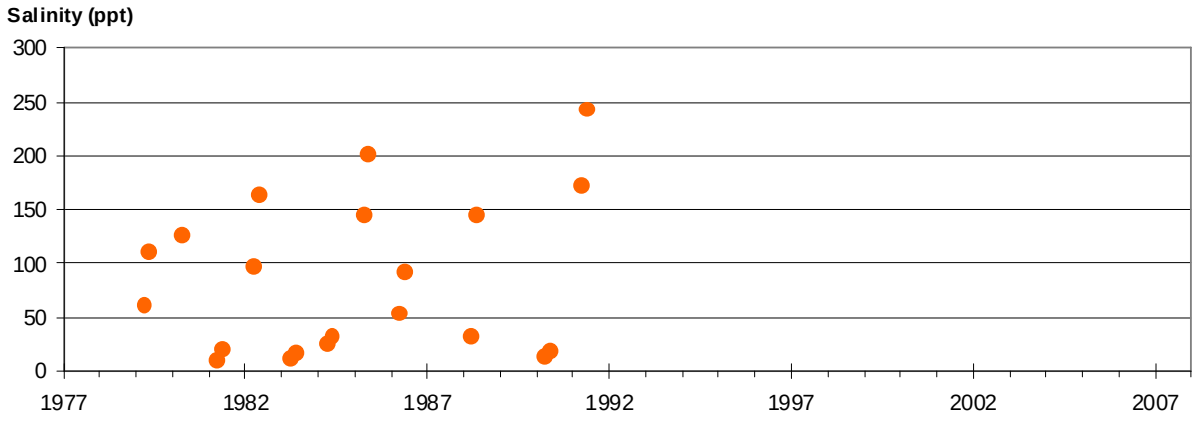


Pillenorup is in the Albany District of the South Coast DEC Region

PINJARREGA (H)

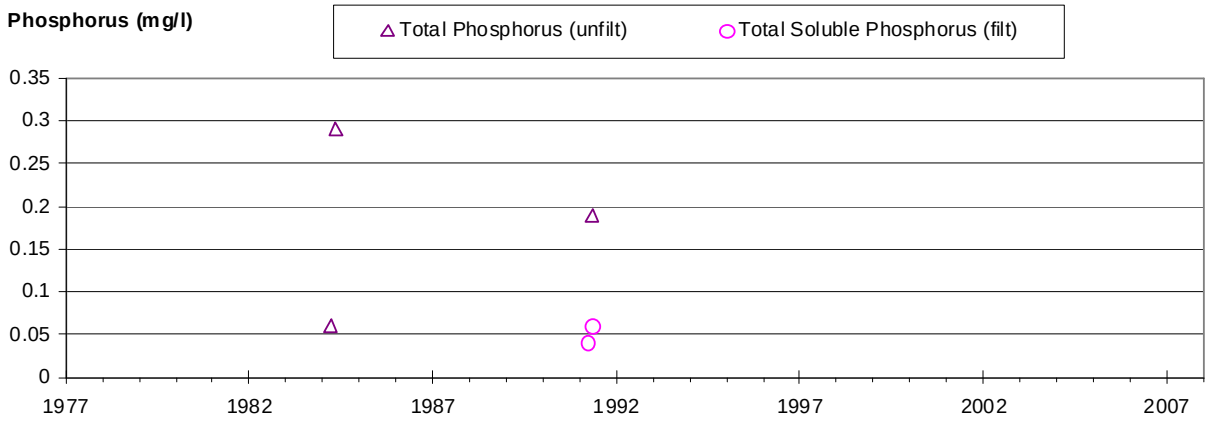


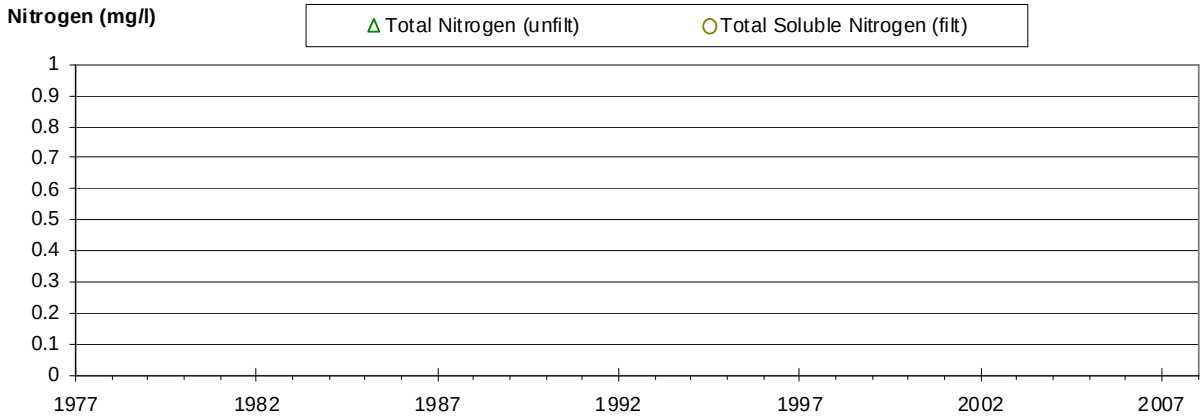




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

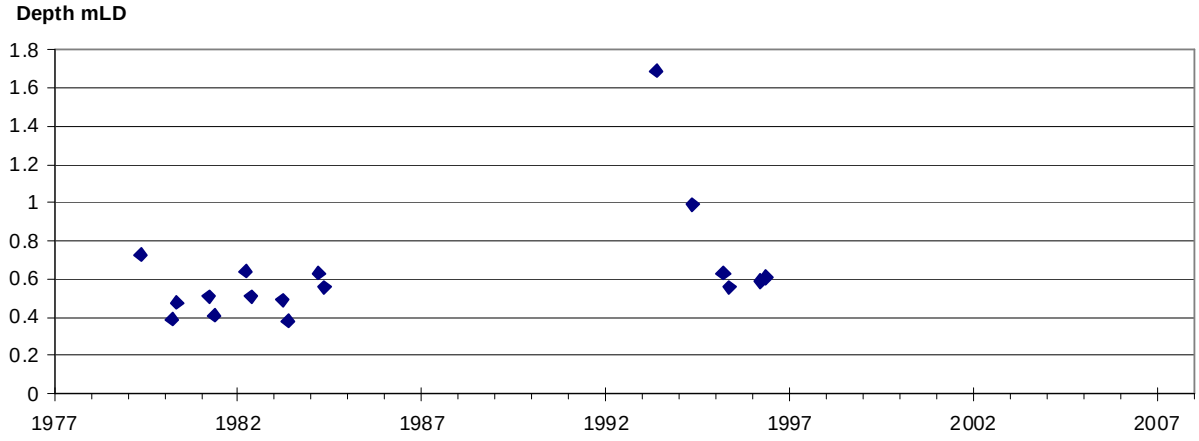
PINJARREGA

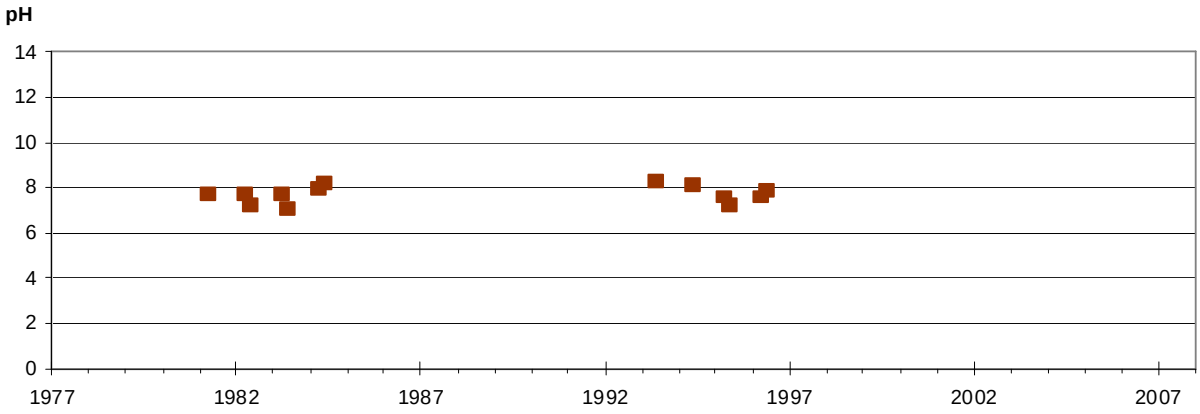


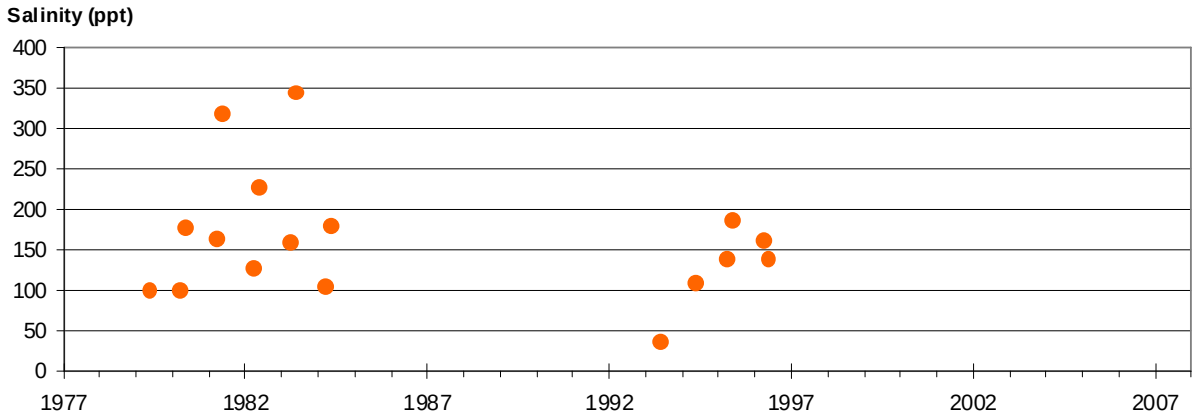


Pinjarrega is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

PLANTAGENET 25386 (H)

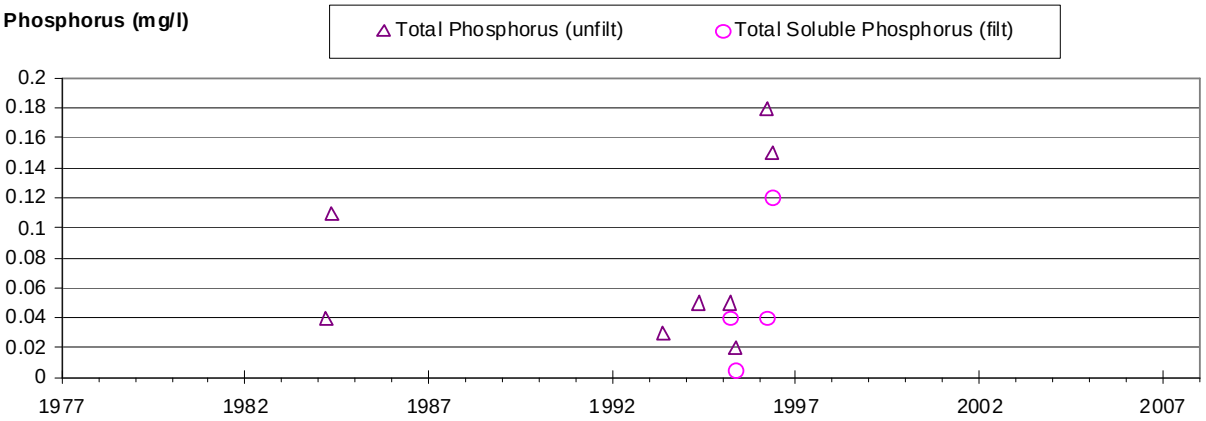


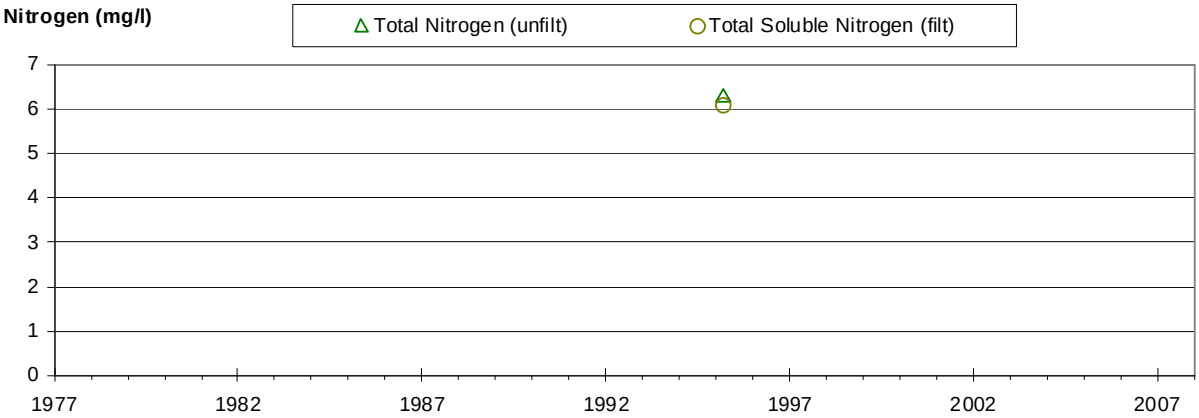




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

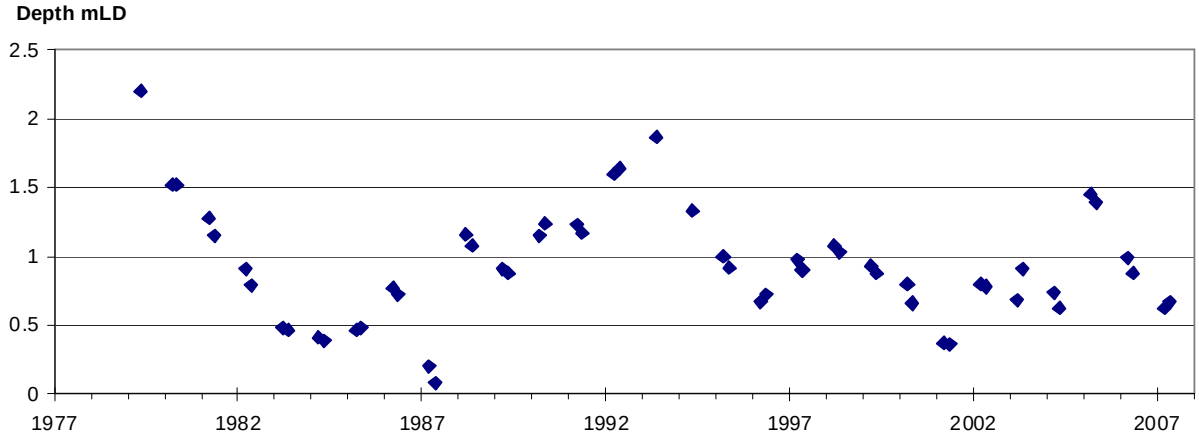
PLANTAGENET 25386

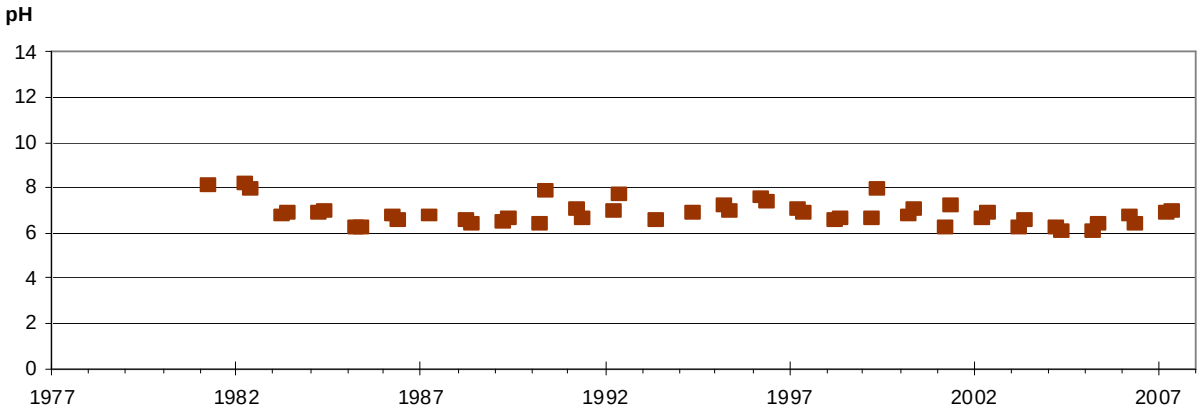


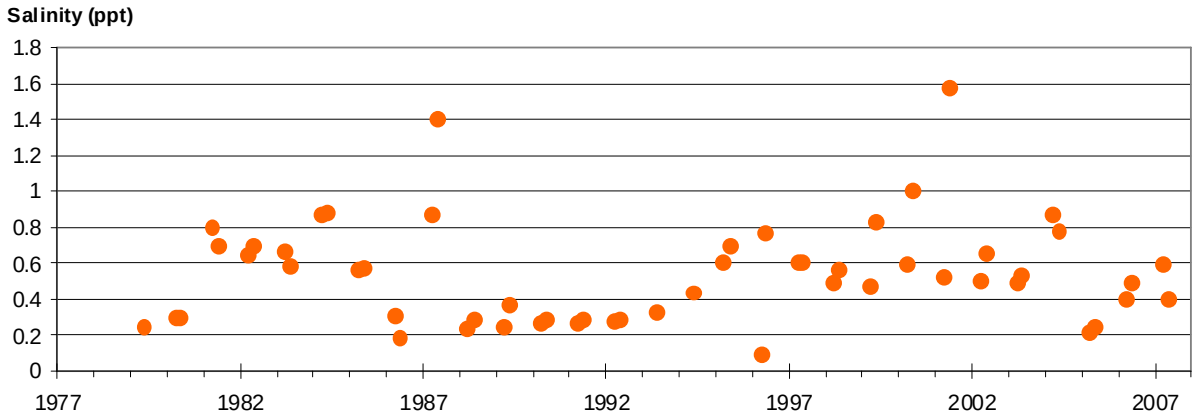


Plantagenet 25386 is in the Albany District of the South Coast DEC Region

PLEASANT VIEW (C, IM)

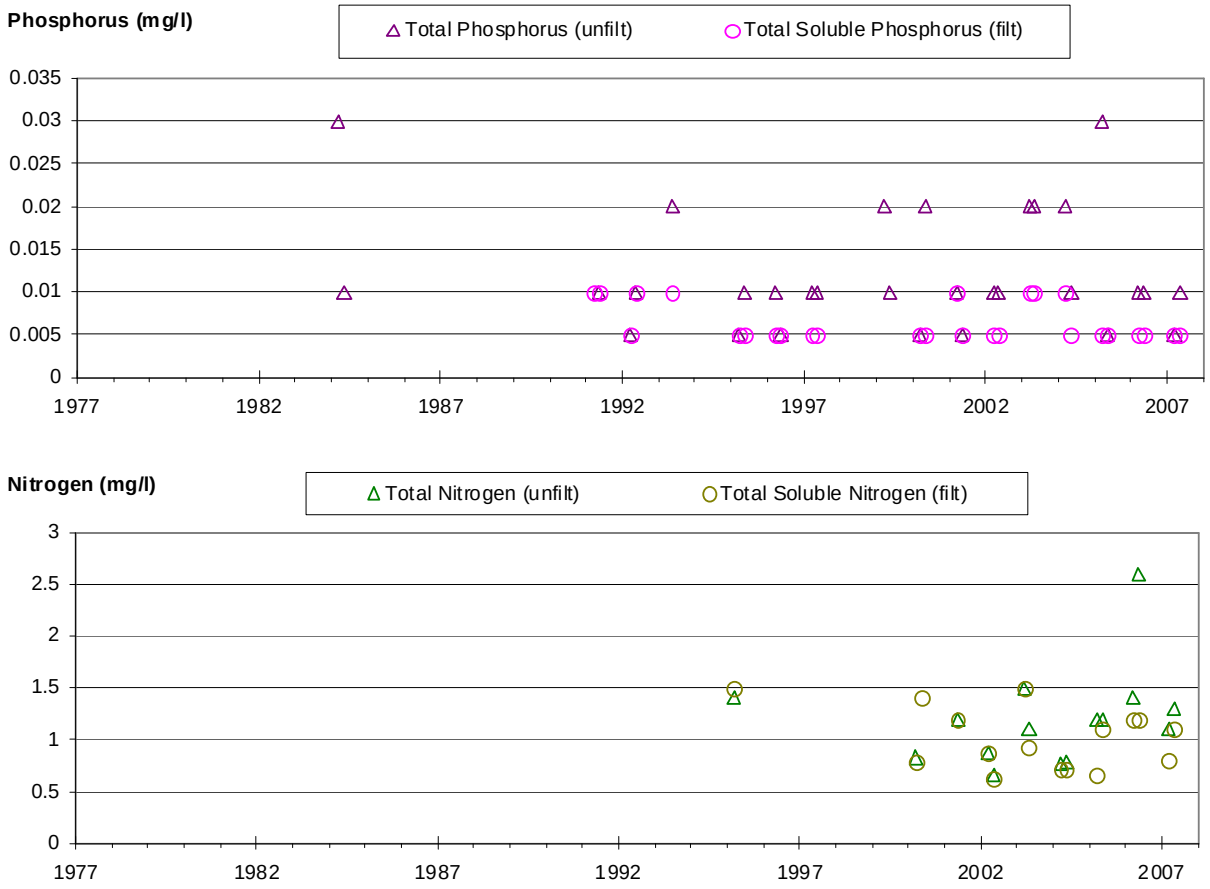






Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

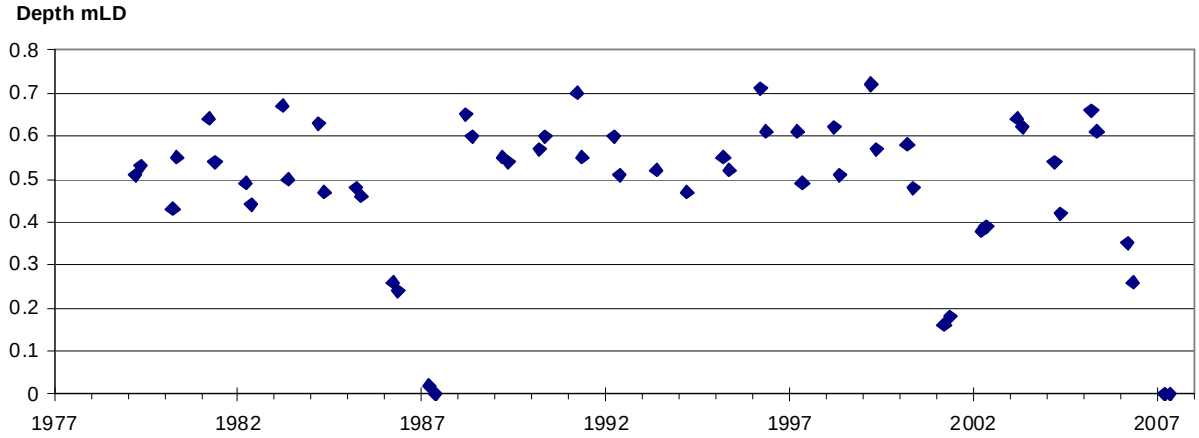
PLEASANT VIEW

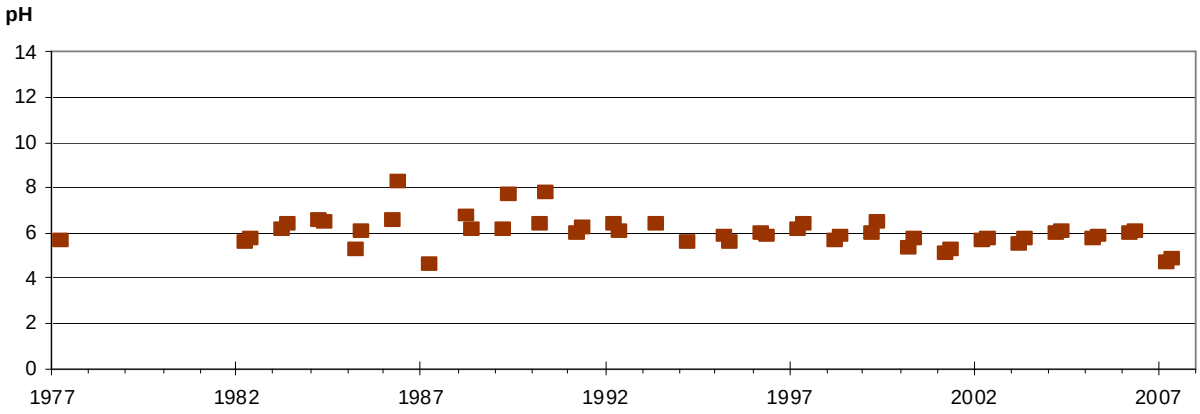


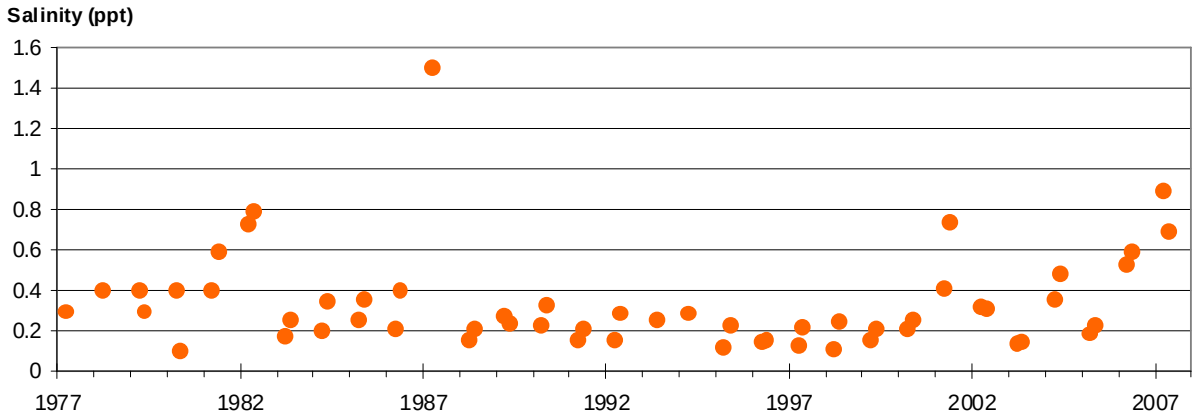
Pleasant View is a component of the 'Lake Pleasant View System', which is listed in the 'Directory of Important Wetlands in Australia'.

Pleasant View is in the Albany District of the South Coast DEC Region

POORGINUP (C)

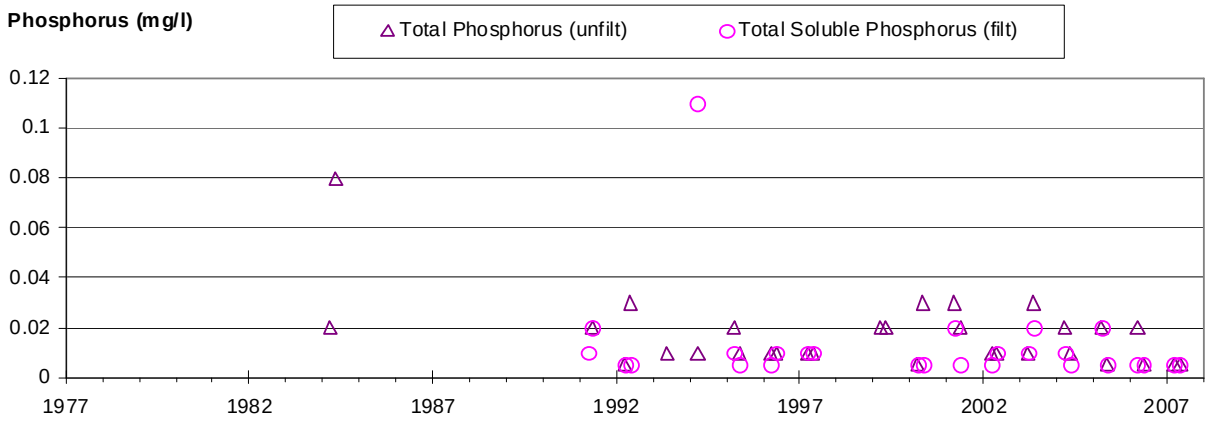


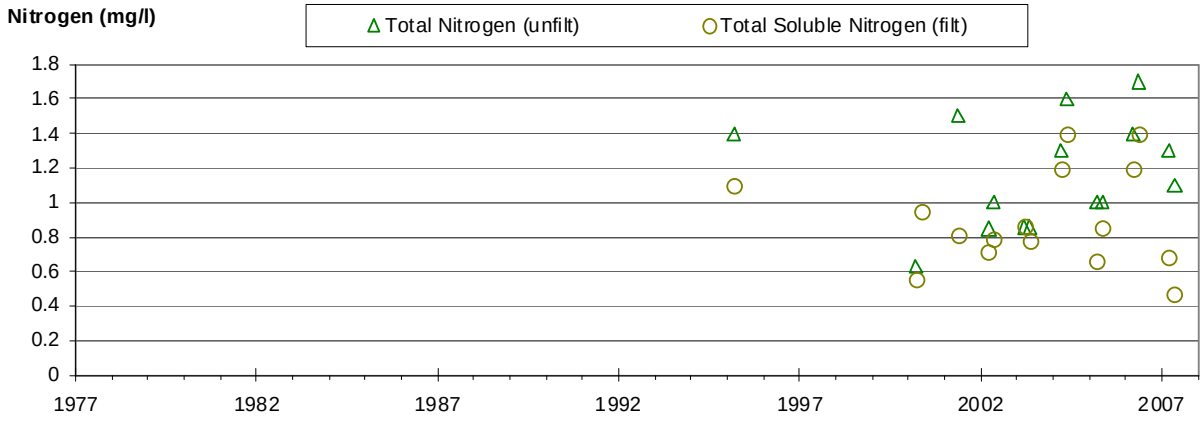




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

POORGINUP





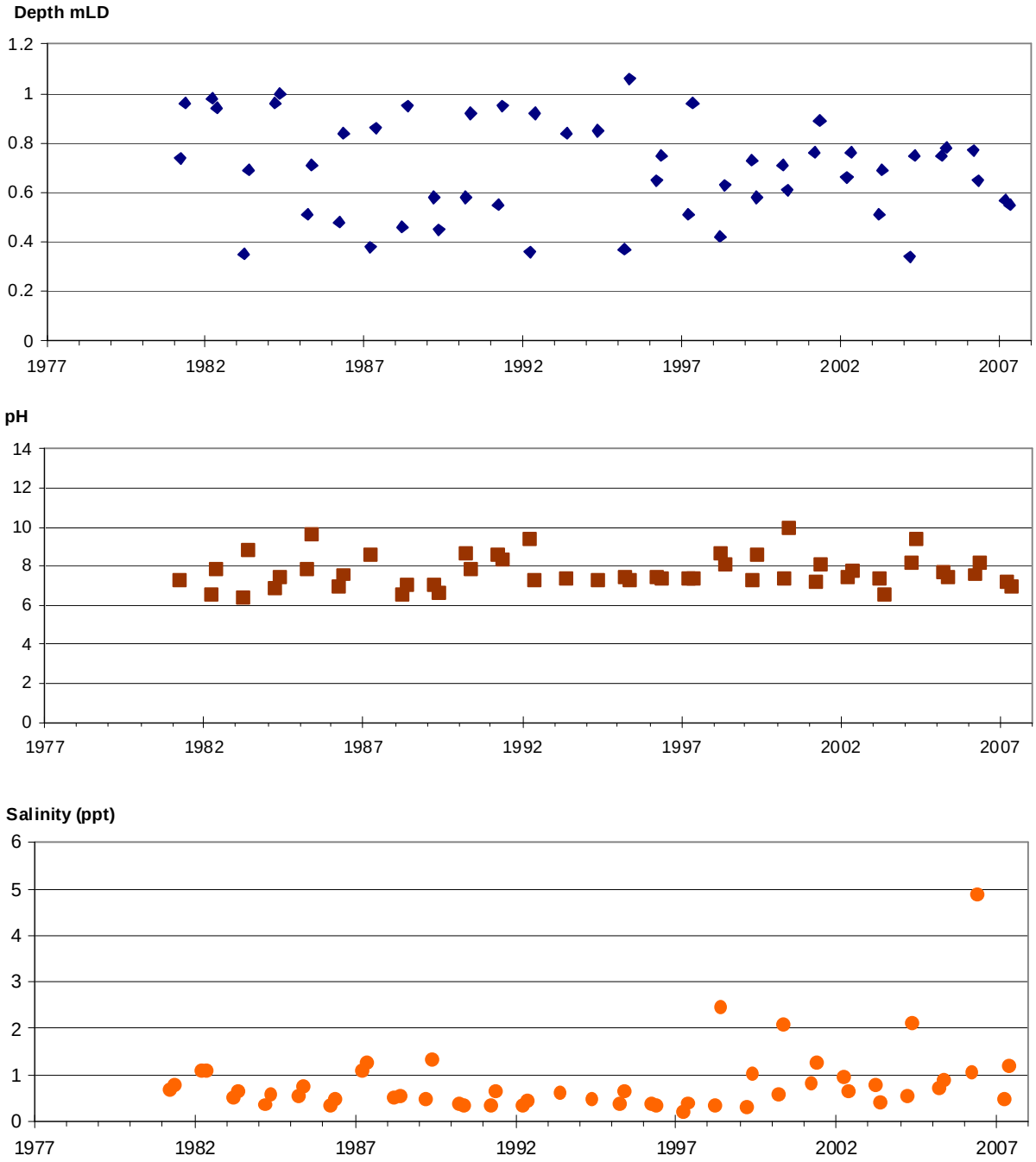
Poorginup is a component of the 'Muir-Byenup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Poorginup is also a component of the 'Byenup Lagoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

Poorginup is within the Muir-Unicup Natural Diversity Recovery Catchment.

Poorginup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

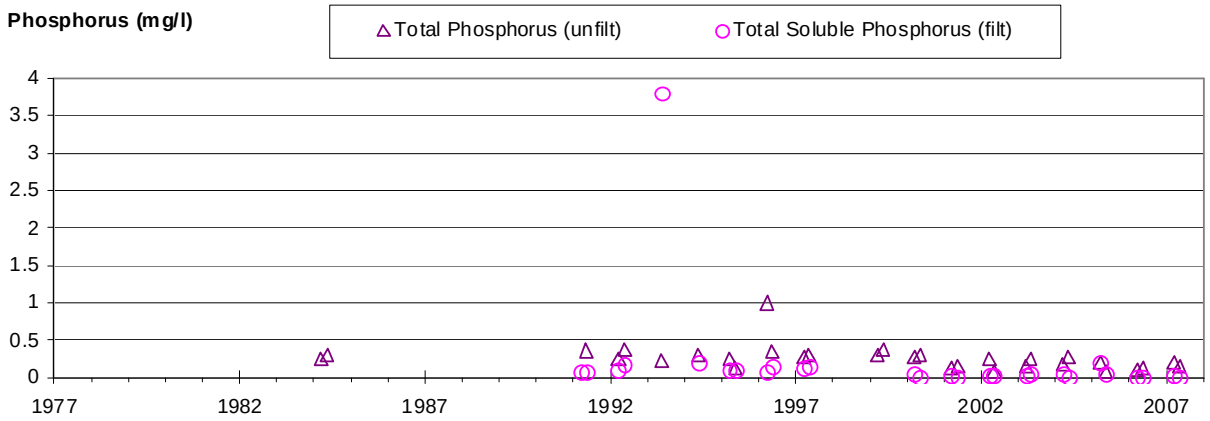
POWELL (C)

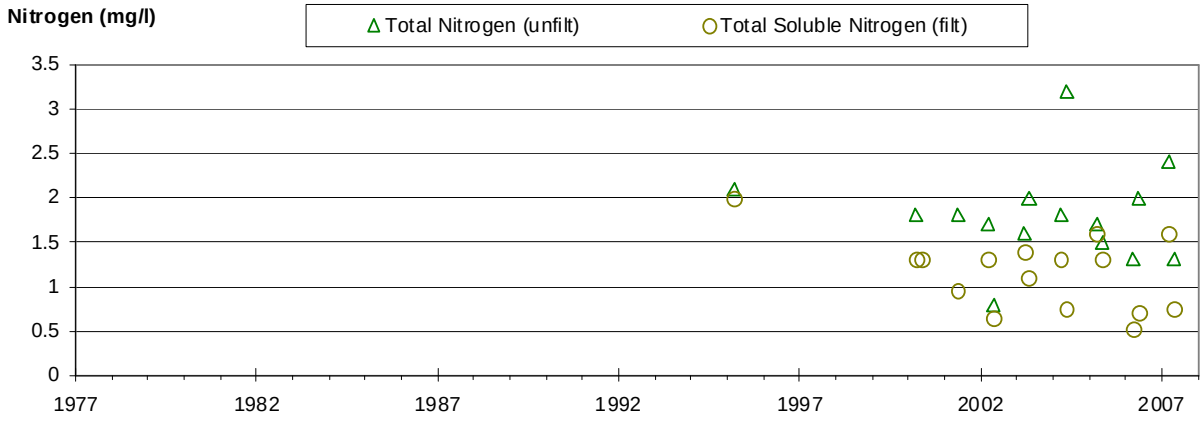


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

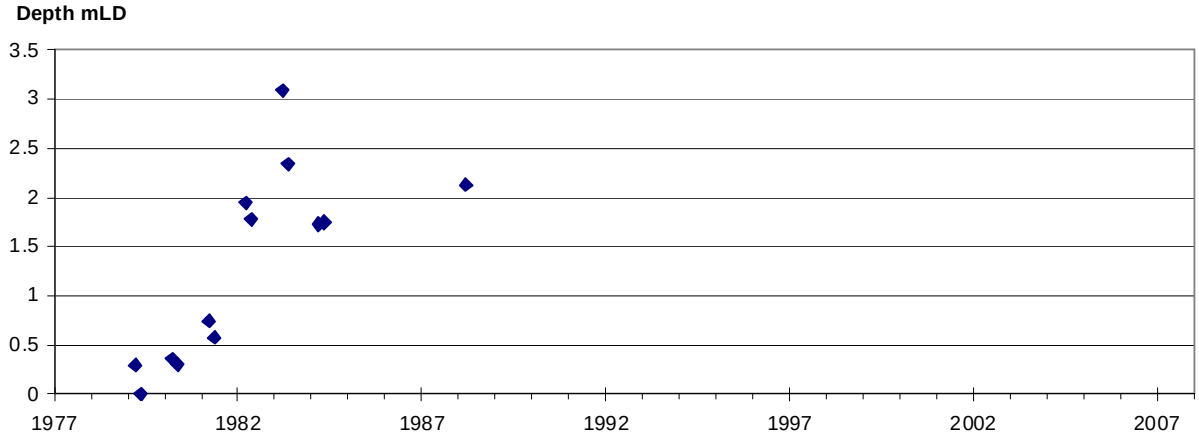
POWELL

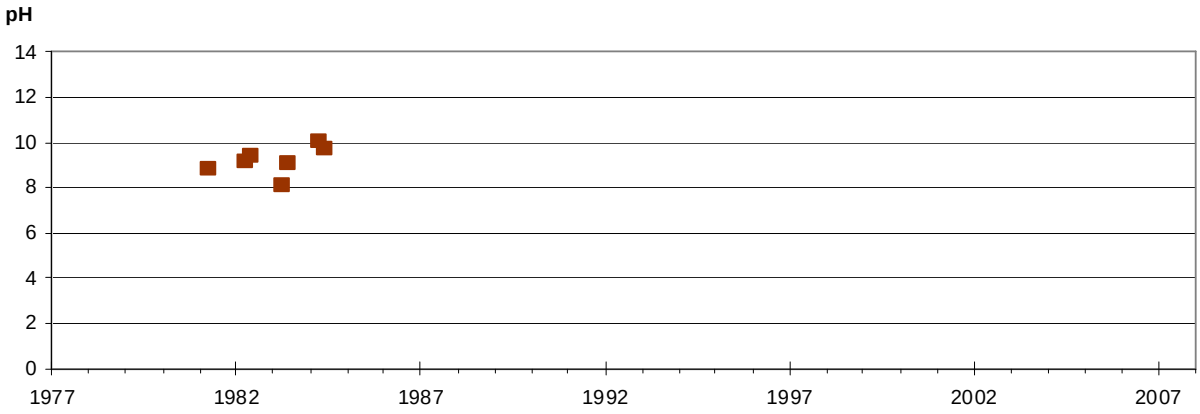


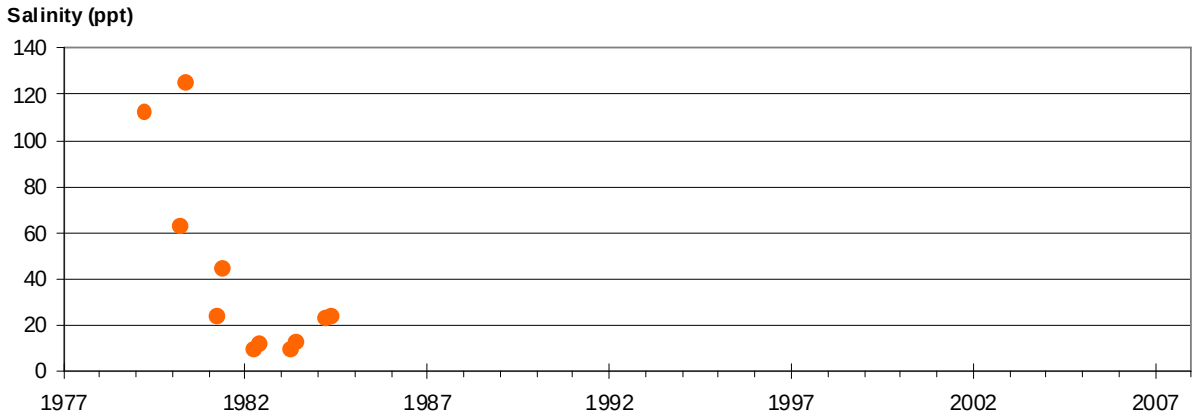


Powell is in the Albany District of the South Coast DEC Region

QUEEREARRUP (H)

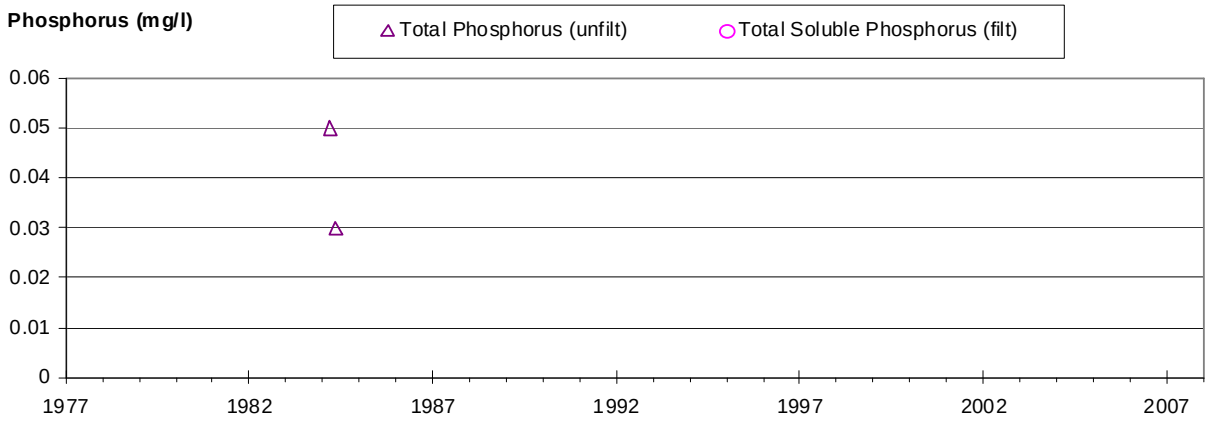


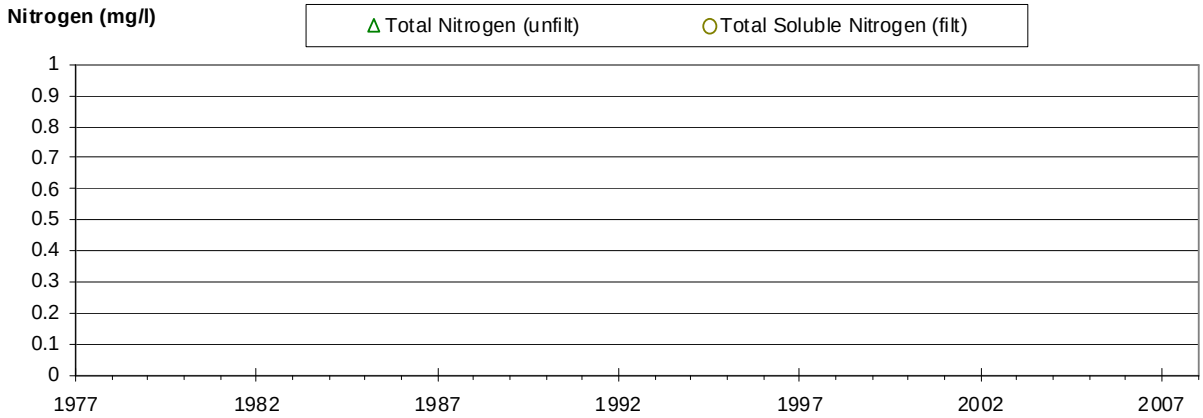




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

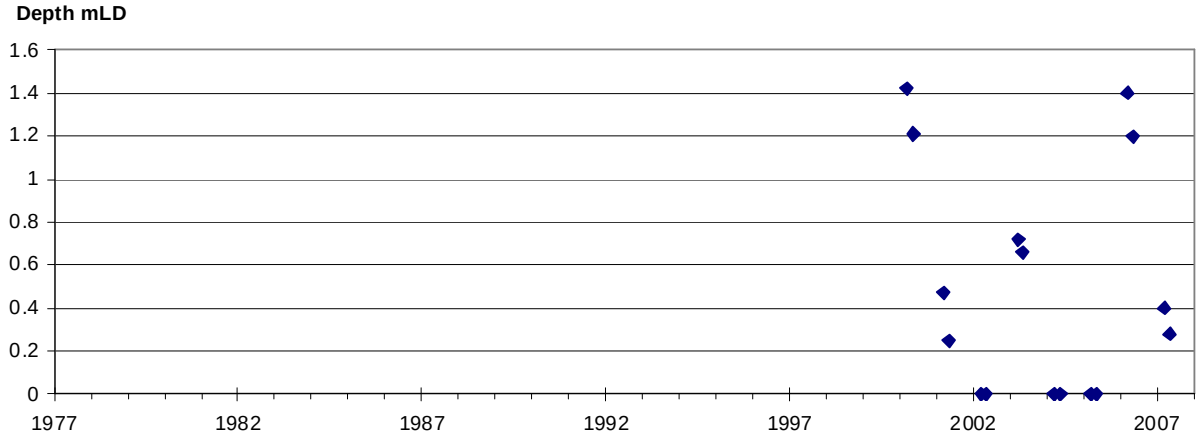
QUEEREARRUP

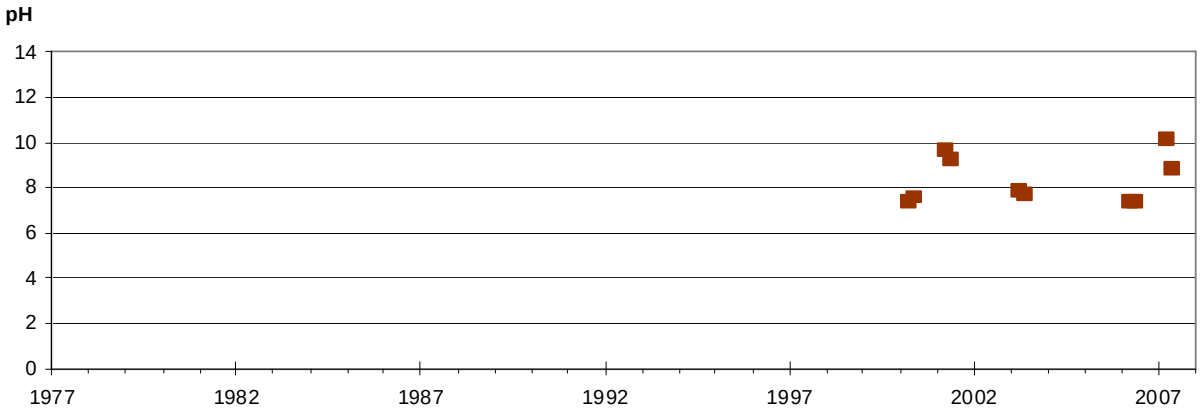


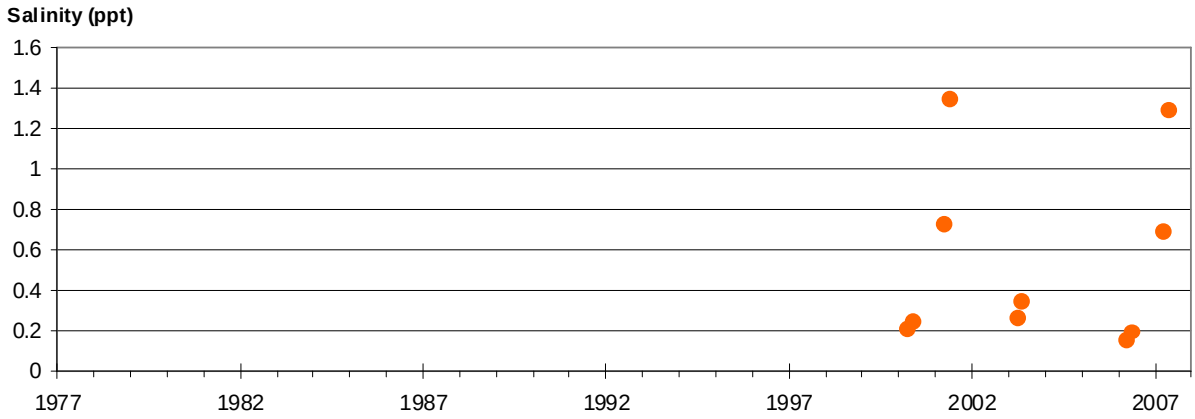


Queerearrup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

RANGE ROAD YATE (C)

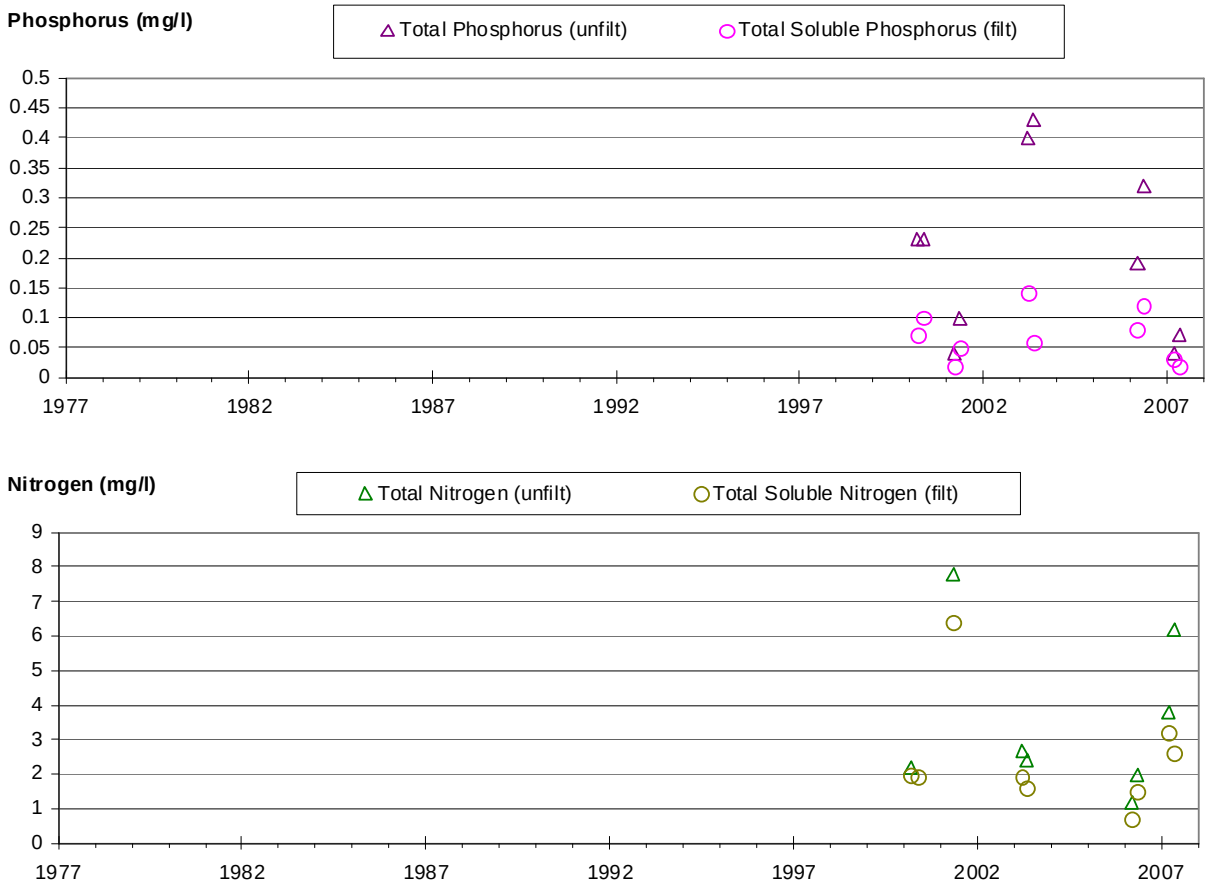






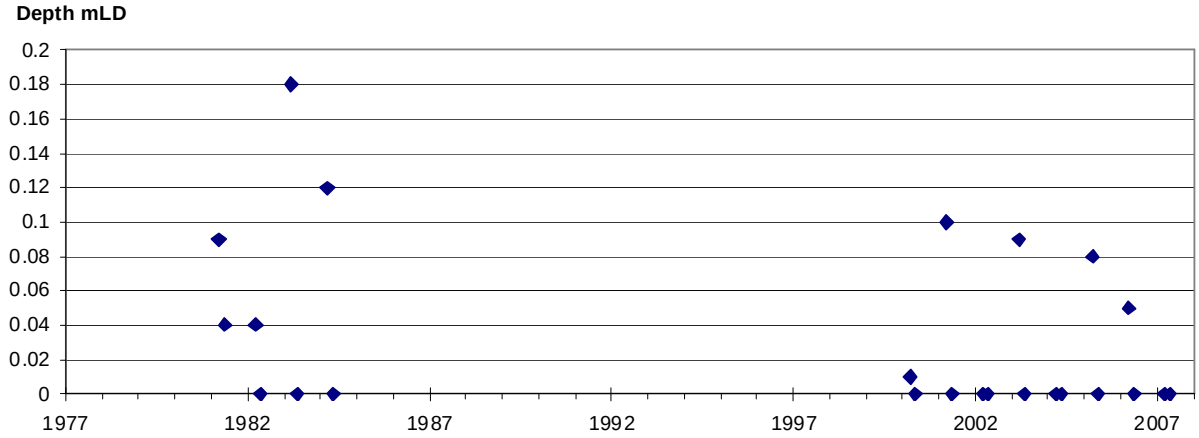
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

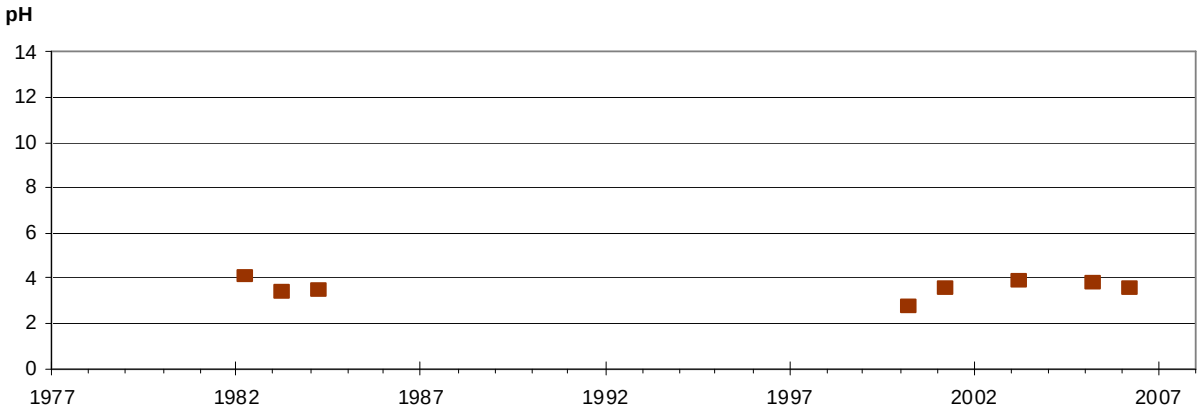
RANGE ROAD YATE

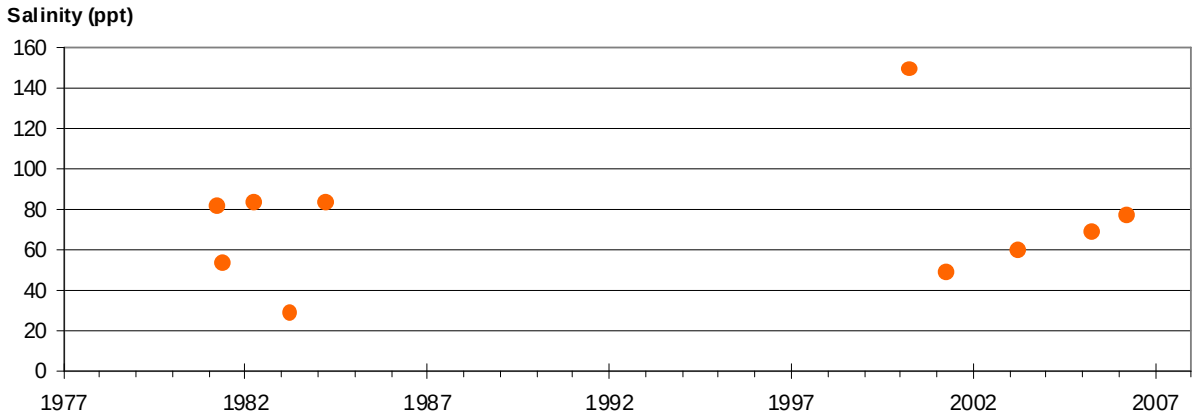


Range Road Yate is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

RED (BRUCE ROCK) (C)

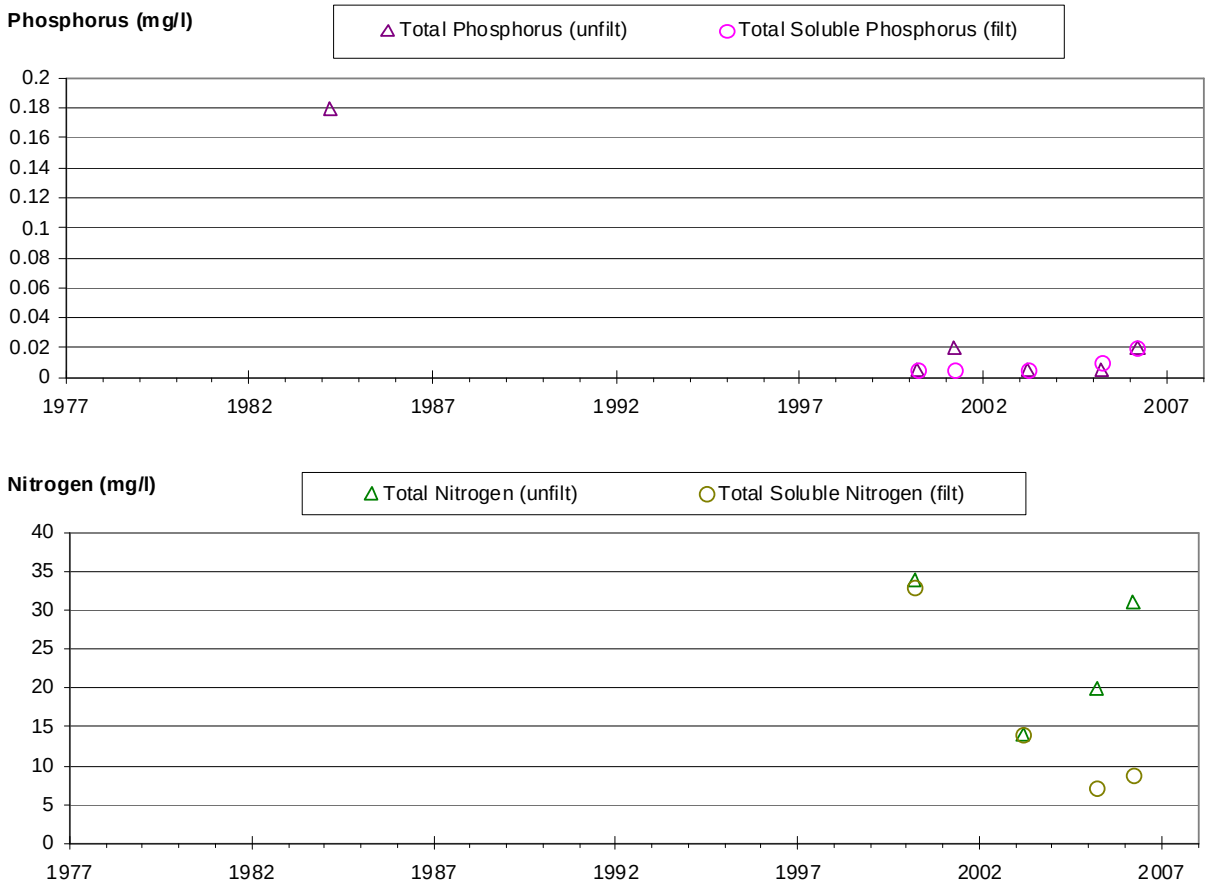






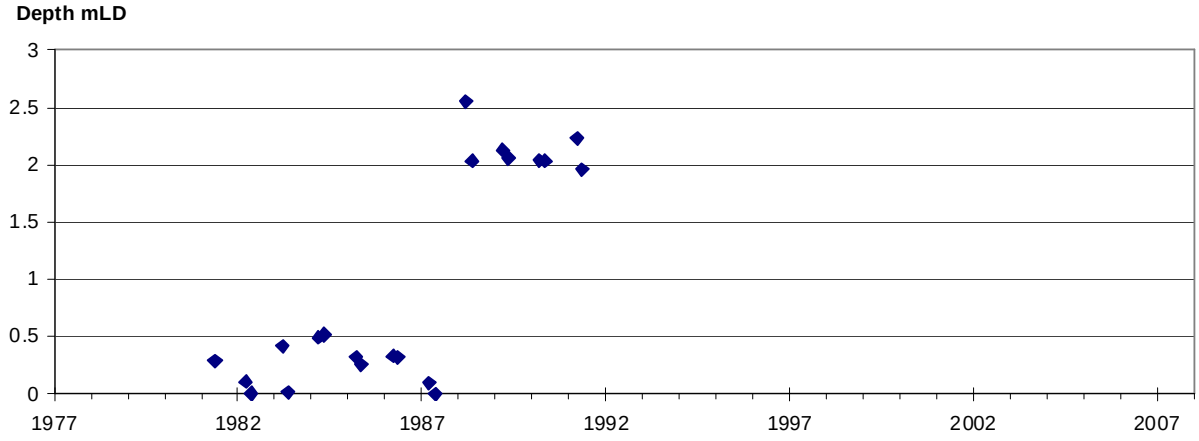
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

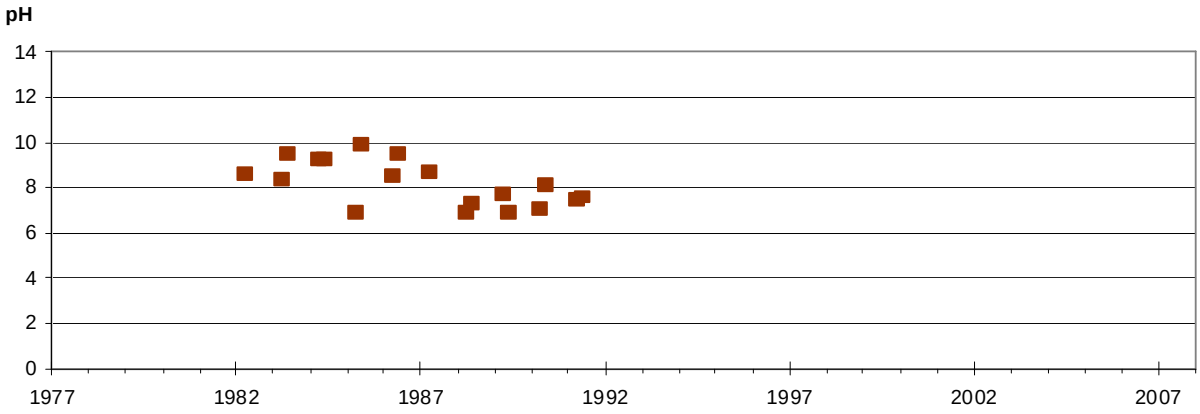
RED (BRUCE ROCK)

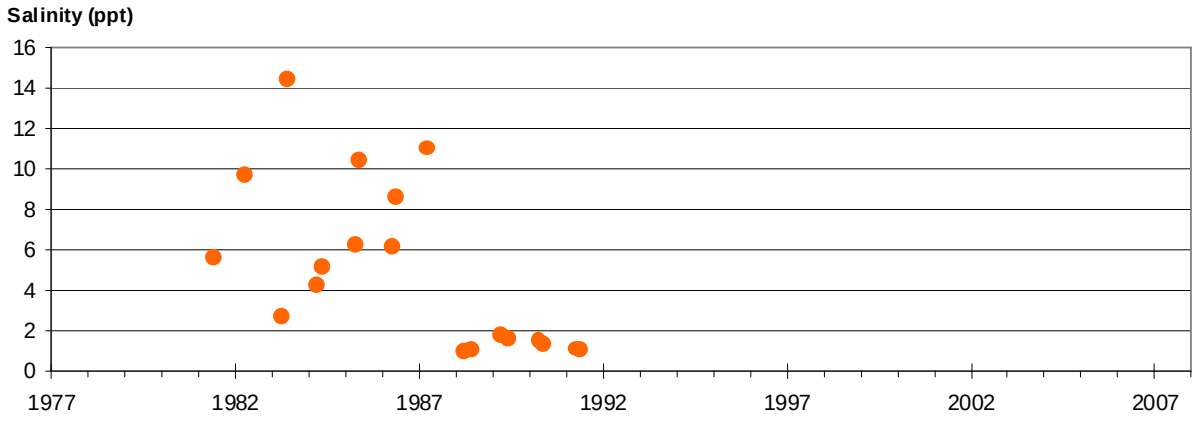


Red (Bruce Rock) is in the Yilgarn District (headquartered in Merredin) of the Wheatbelt DEC Region.

RED (MANJIMUP) (H)

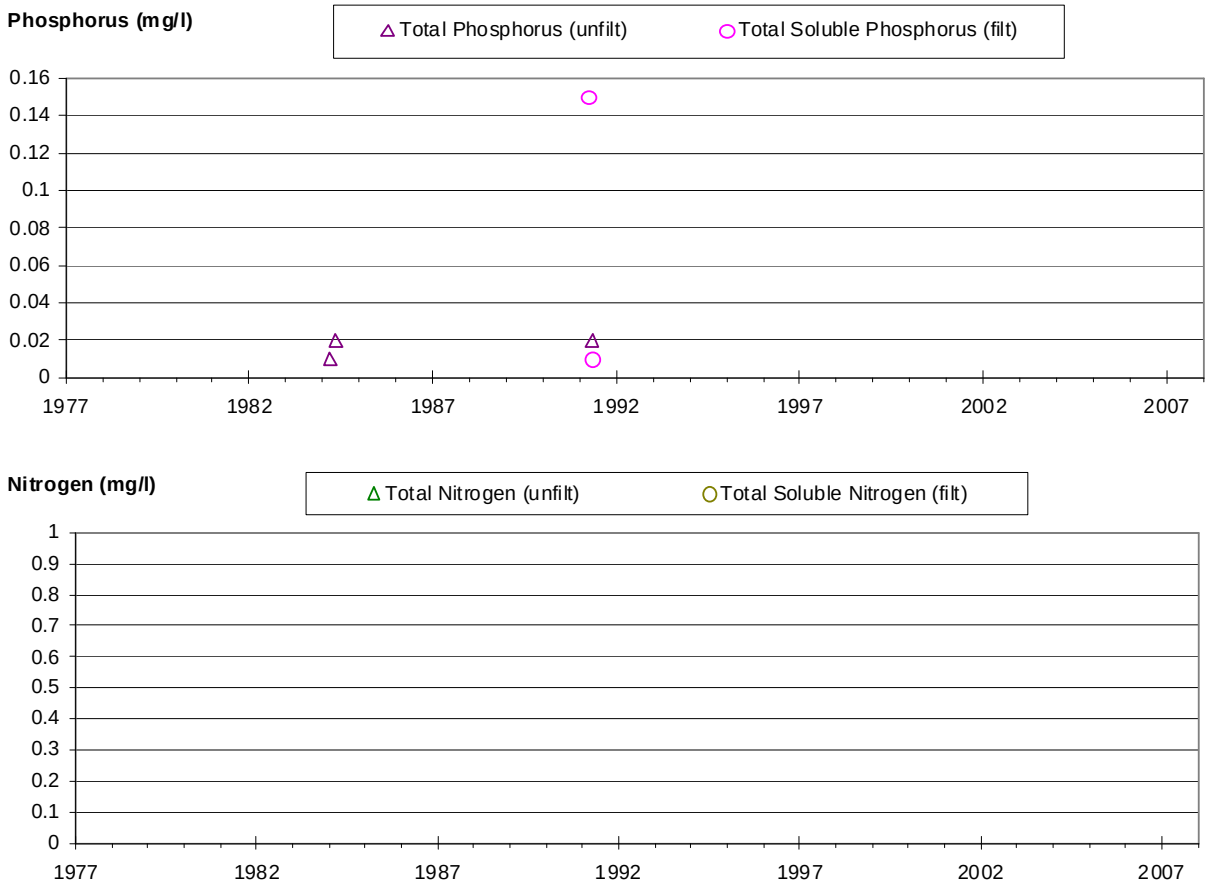






Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

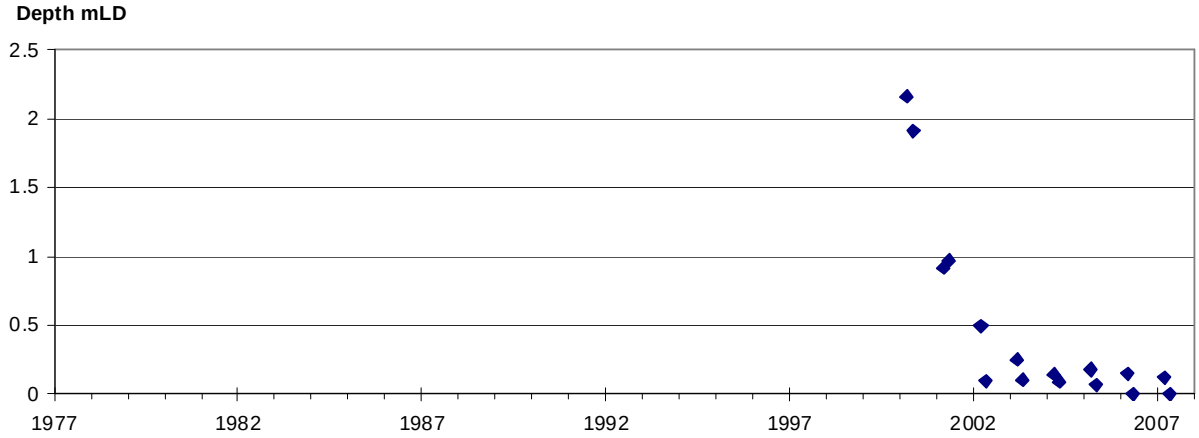
RED (MANJIMUP)

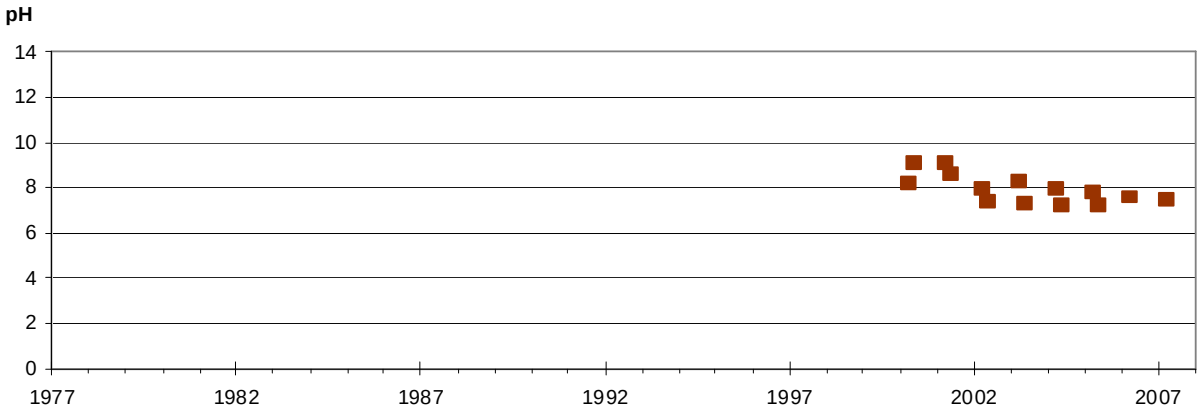


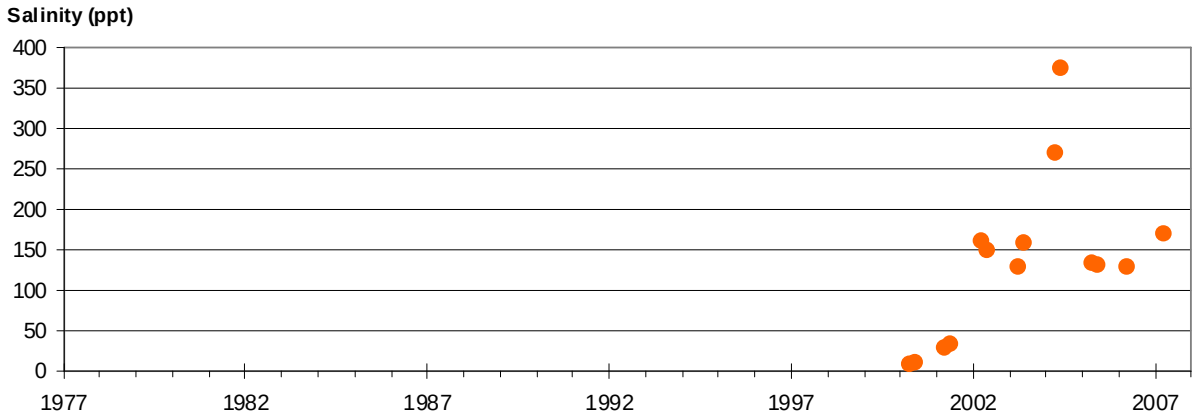
Red (Manjimup) is within the Muir-Unicup Natural Diversity Recovery Catchment.

Red (Manjimup) is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

RONNERUP (C, IM)







Notes:
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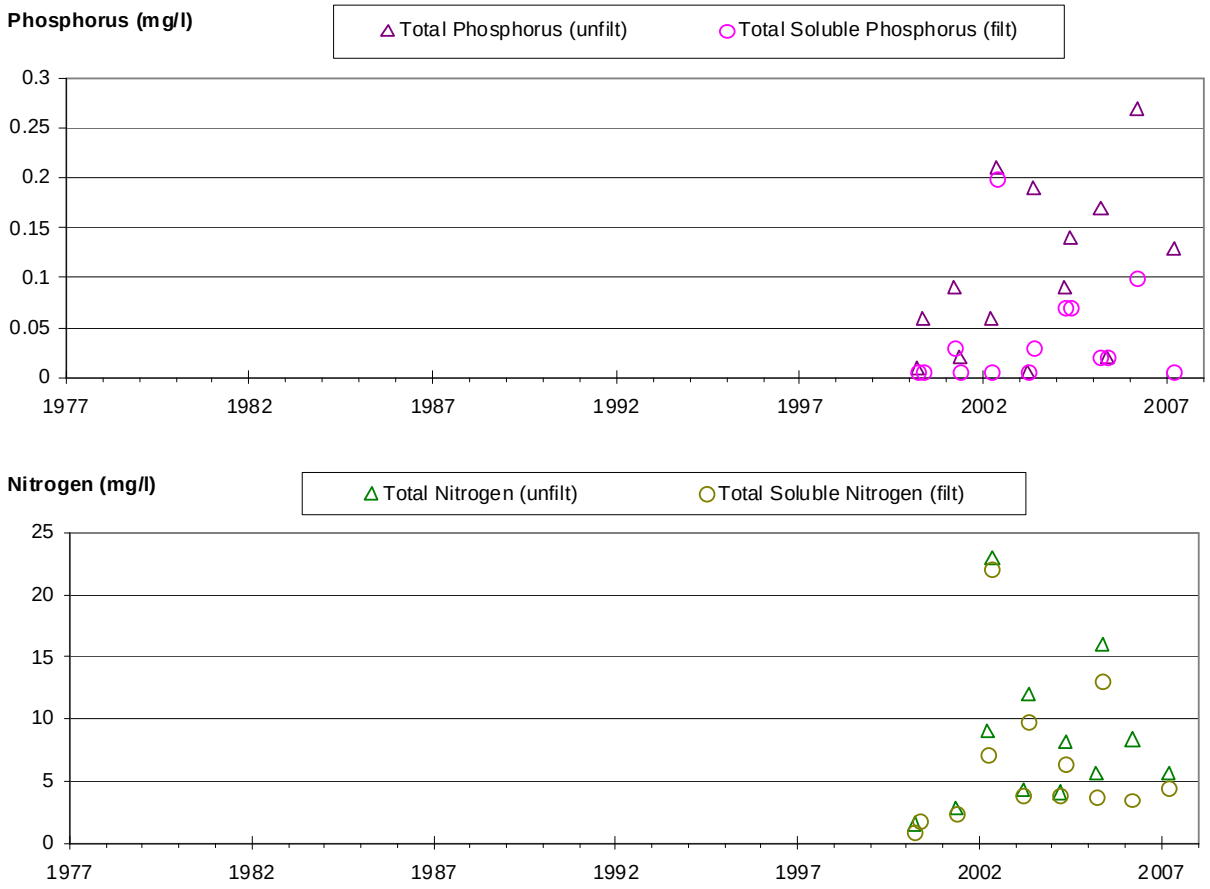
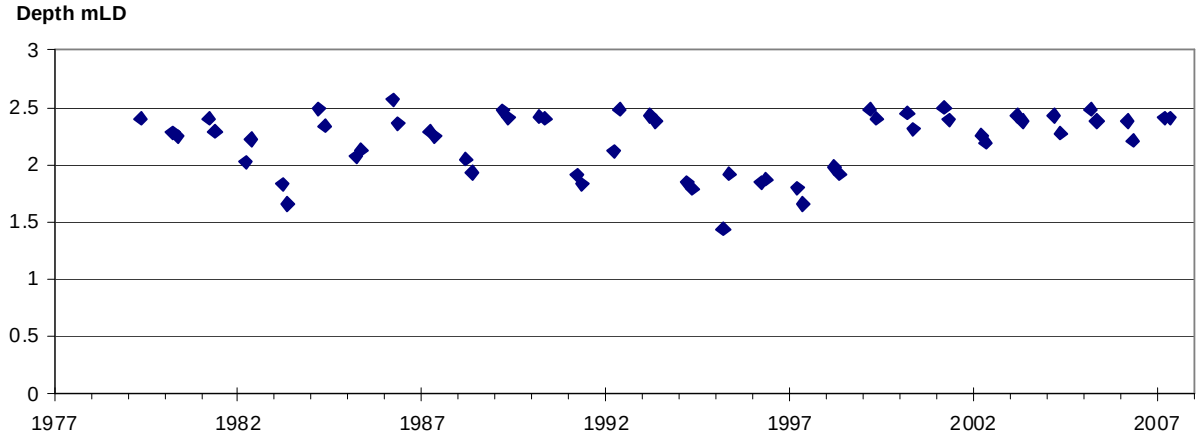
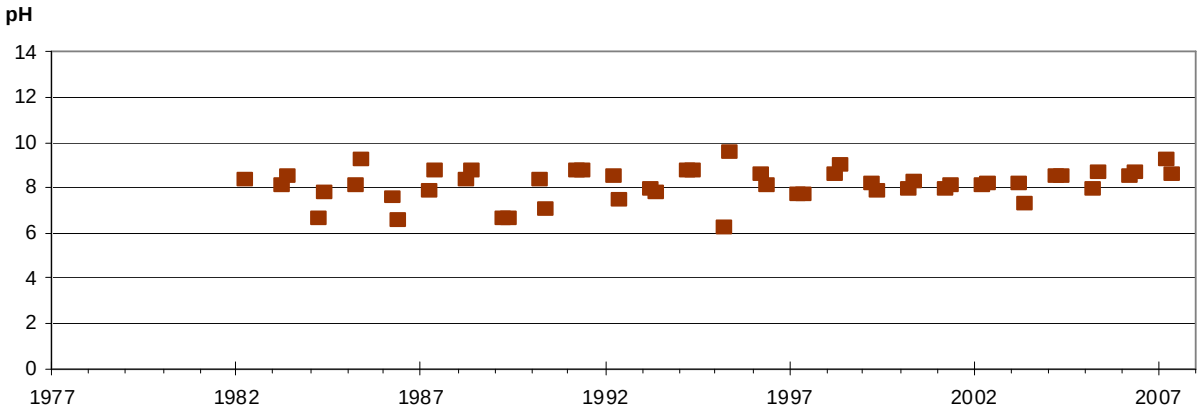
RONNERUP

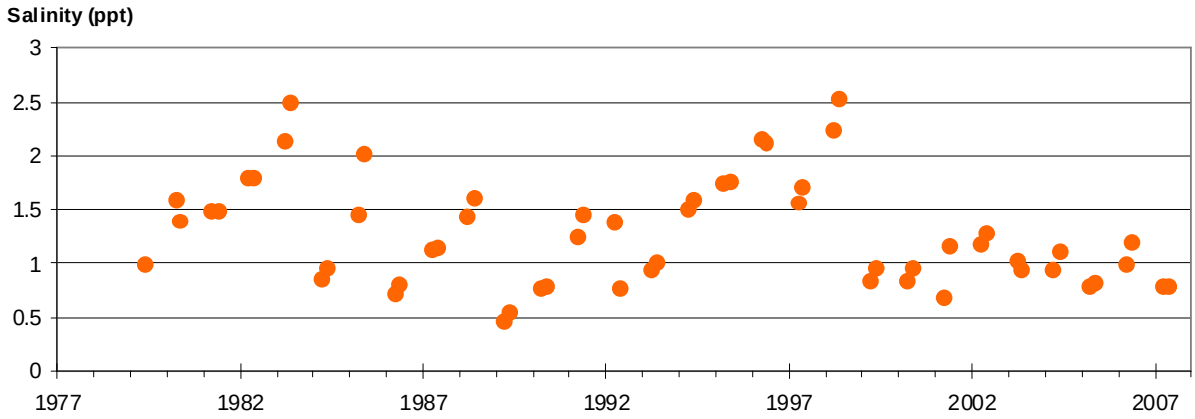


Ronnerup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

SHARK (C)

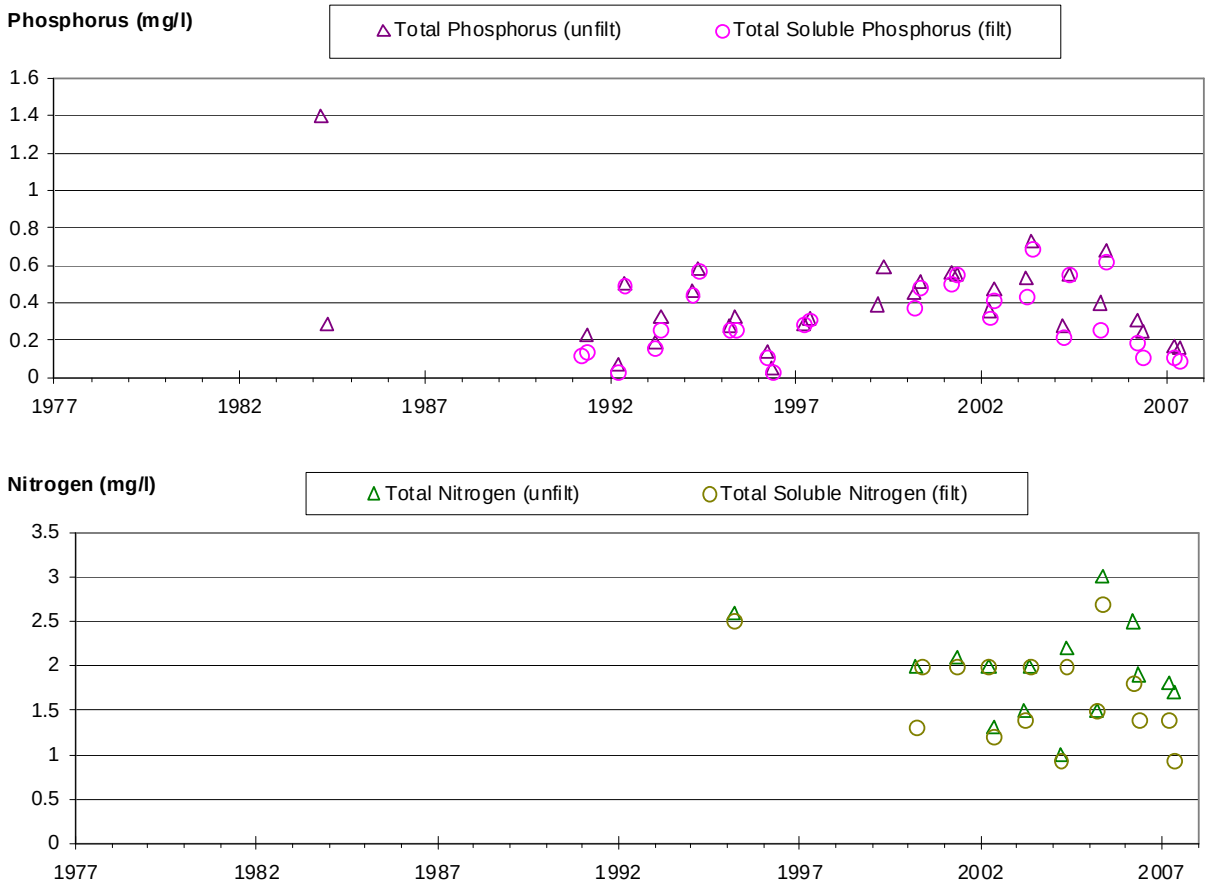






Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

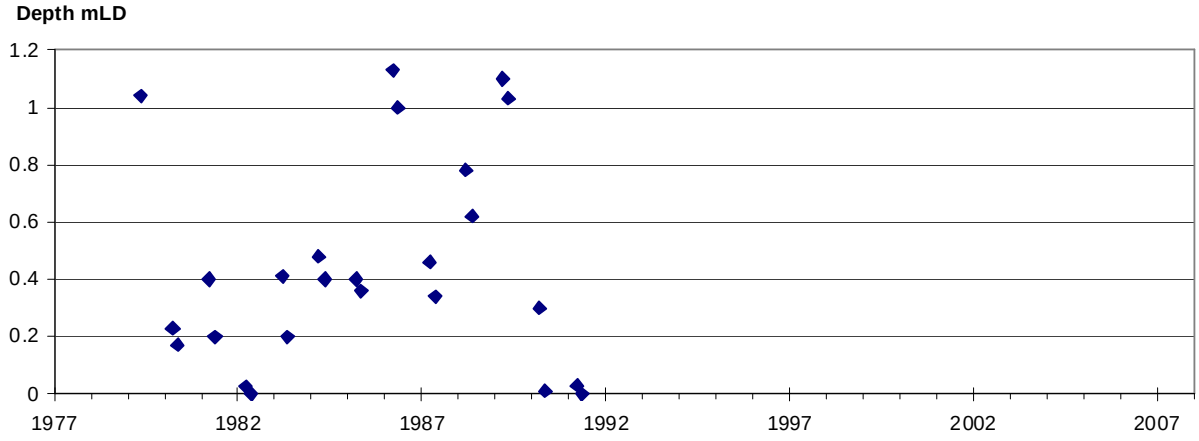
SHARK

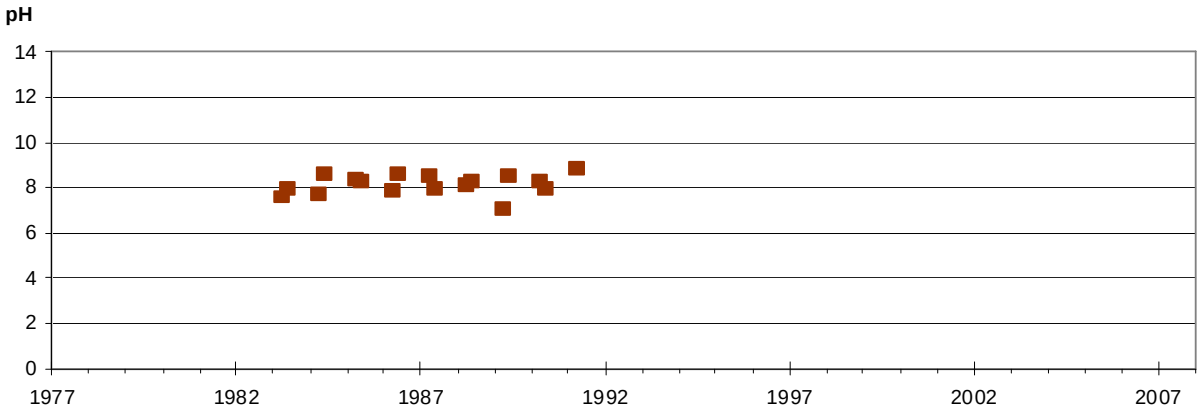


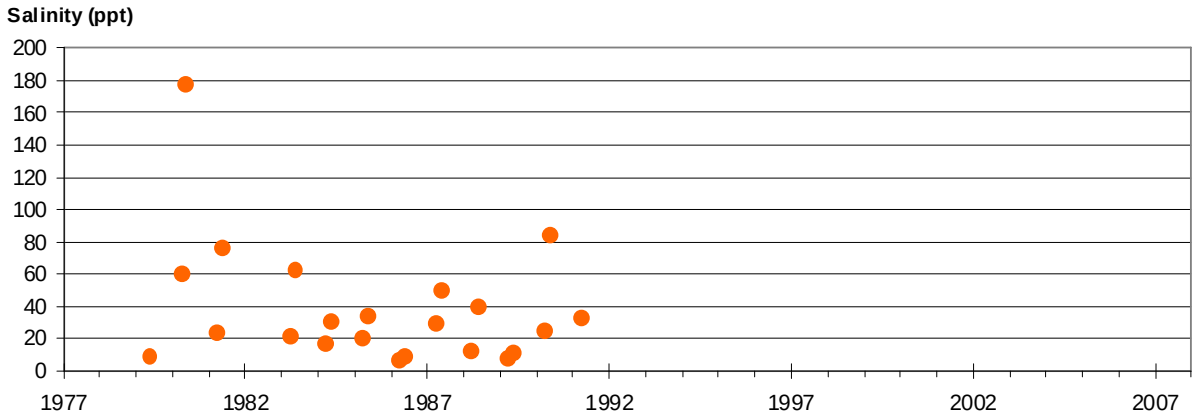
Shark is within the Esperance Lakes Natural Diversity Recovery Catchment.

Shark is in the Esperance District of the South Coast DEC Region.

SHASTER (H)

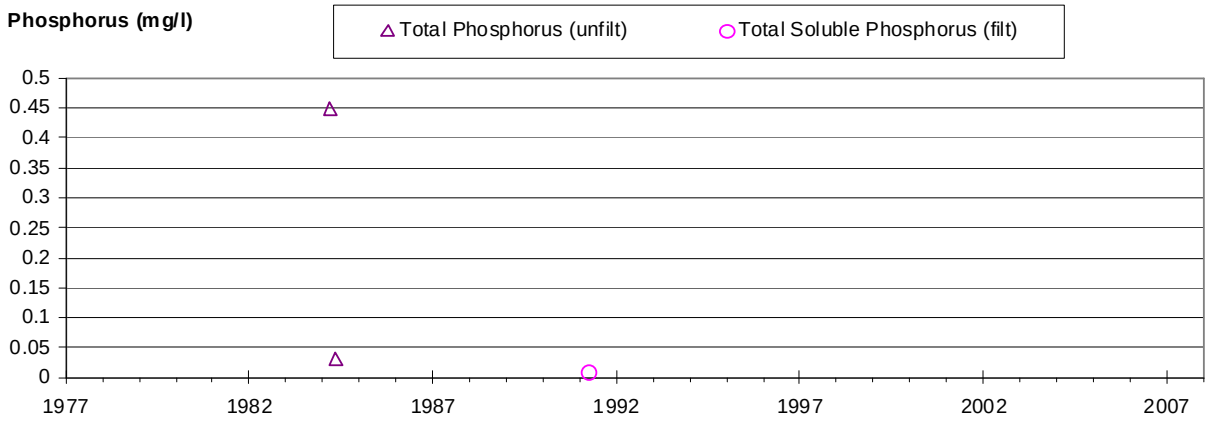


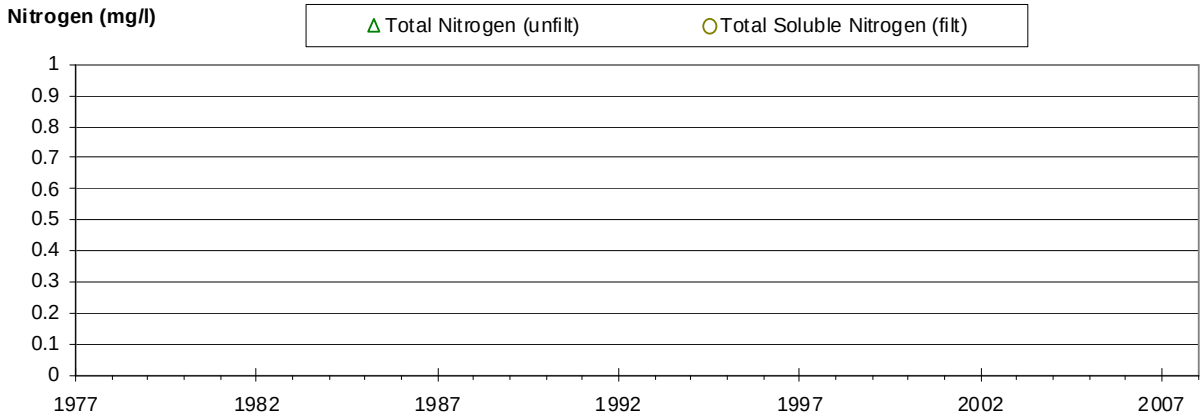




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

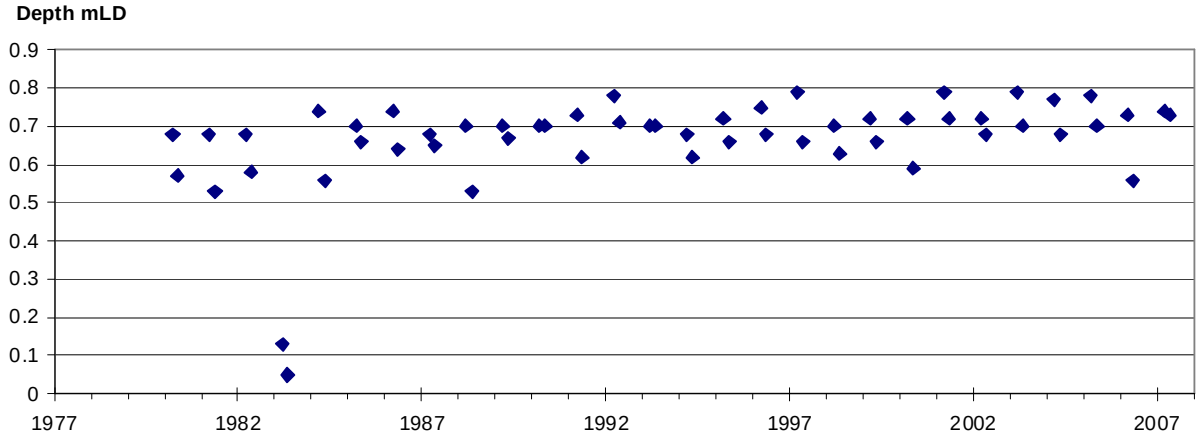
SHASTER

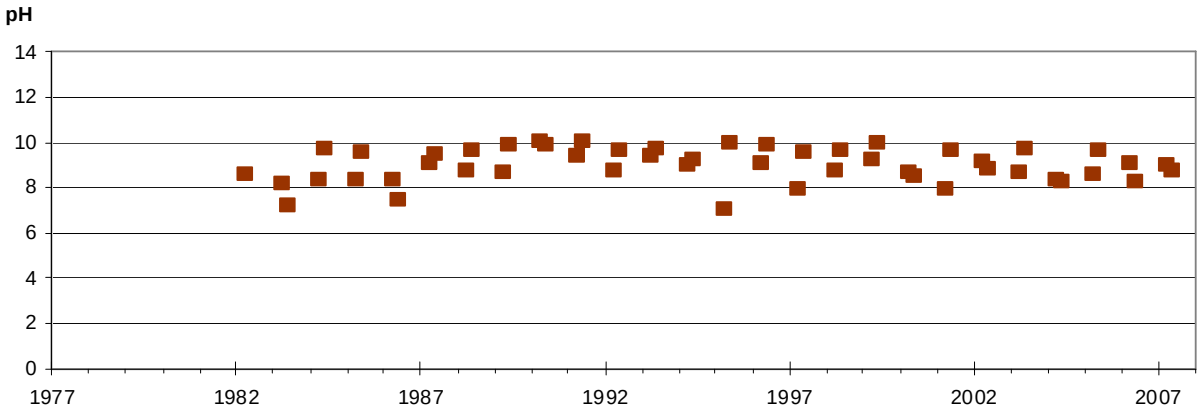


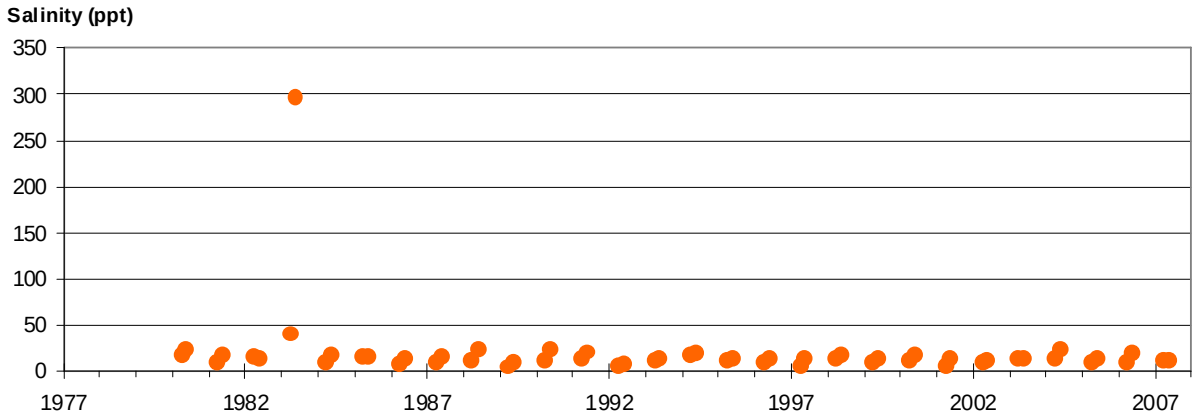


Shaster is in the Esperance District of the South Coast DEC Region.

STATION (C)







Notes:
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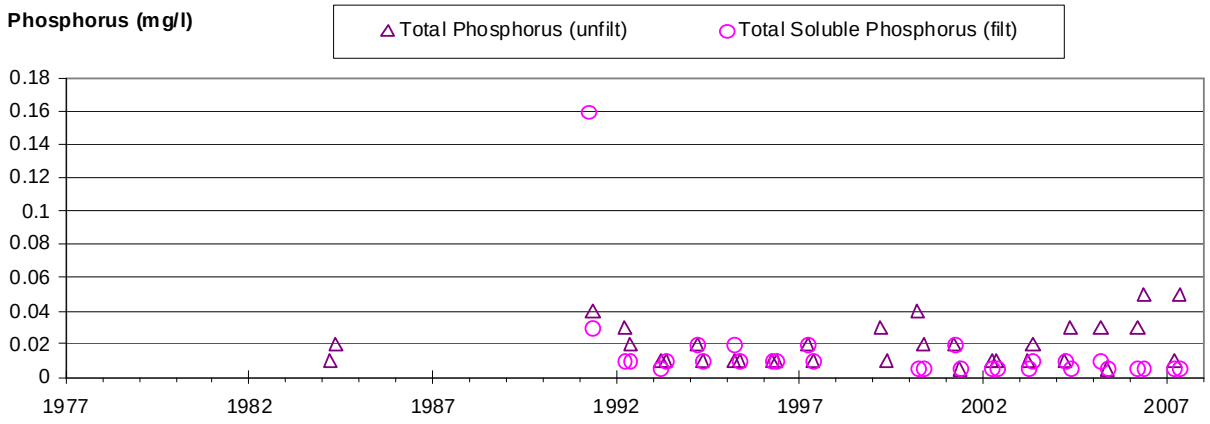
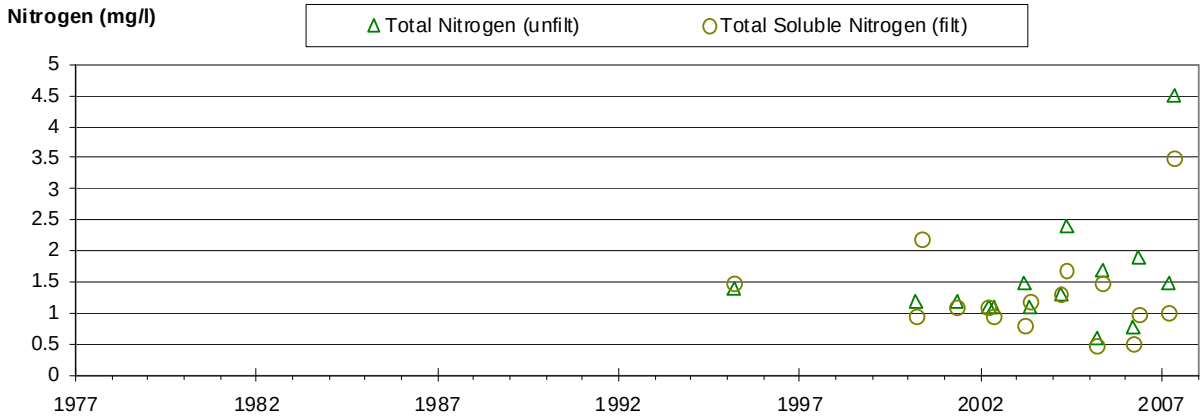
STATION





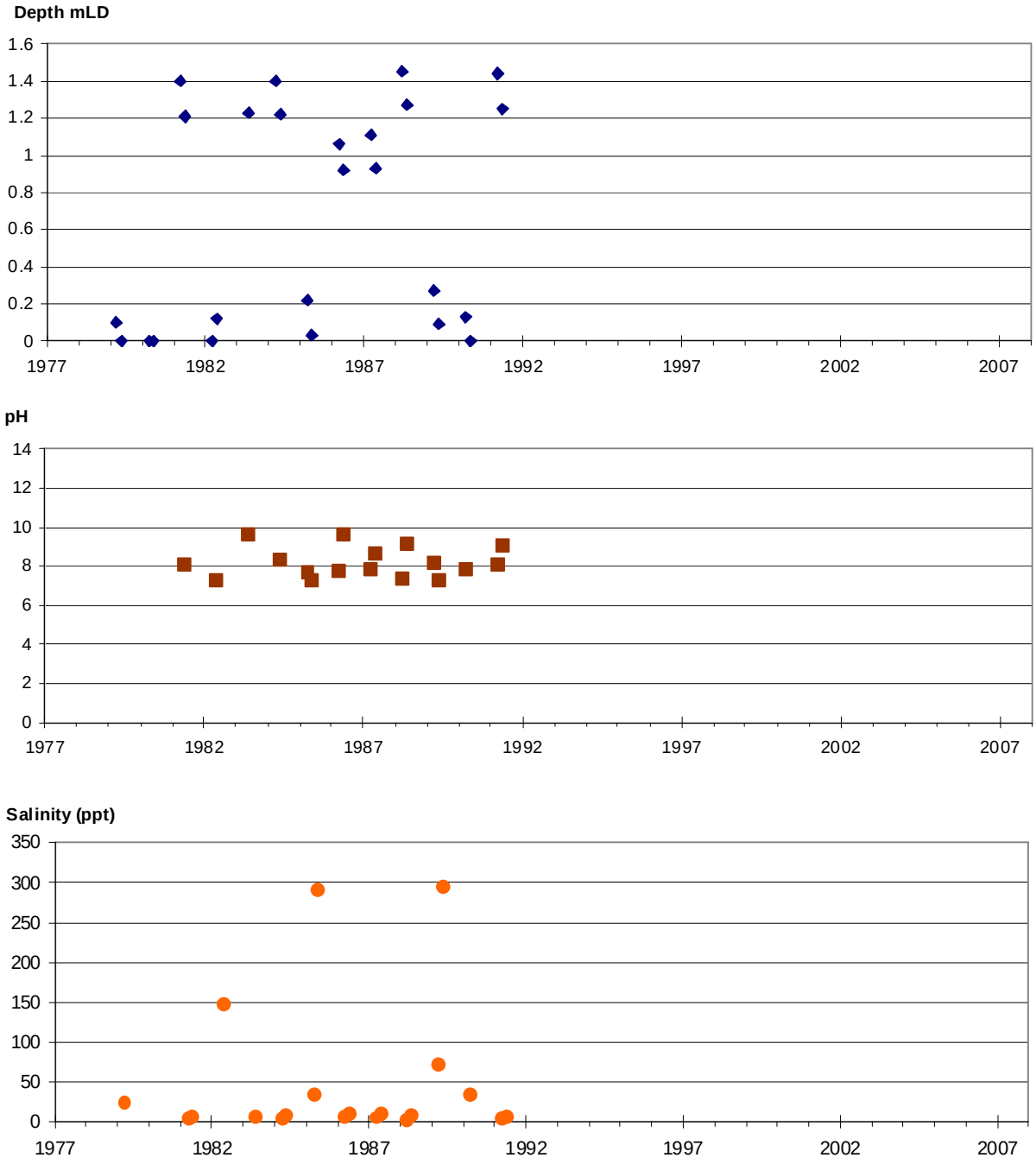
Station is a component of the 'Lake Warden System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Station is also a component of the 'Lake Warden System' listed in the 'Directory of Important Wetlands in Australia'.

Station is within the Esperance Lakes Natural Diversity Recovery Catchment.

Station is in the Esperance District of the South Coast DEC Region.

STREETS (H)



Notes:

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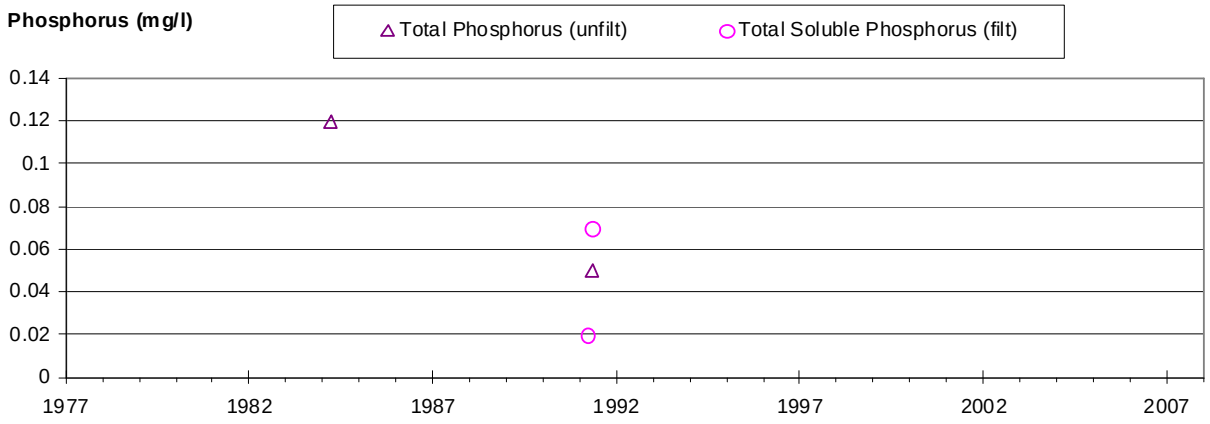
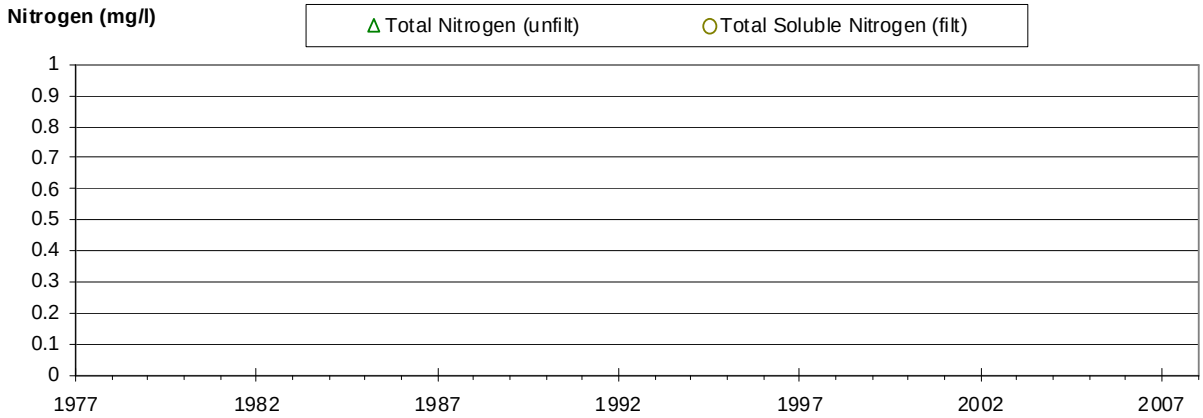
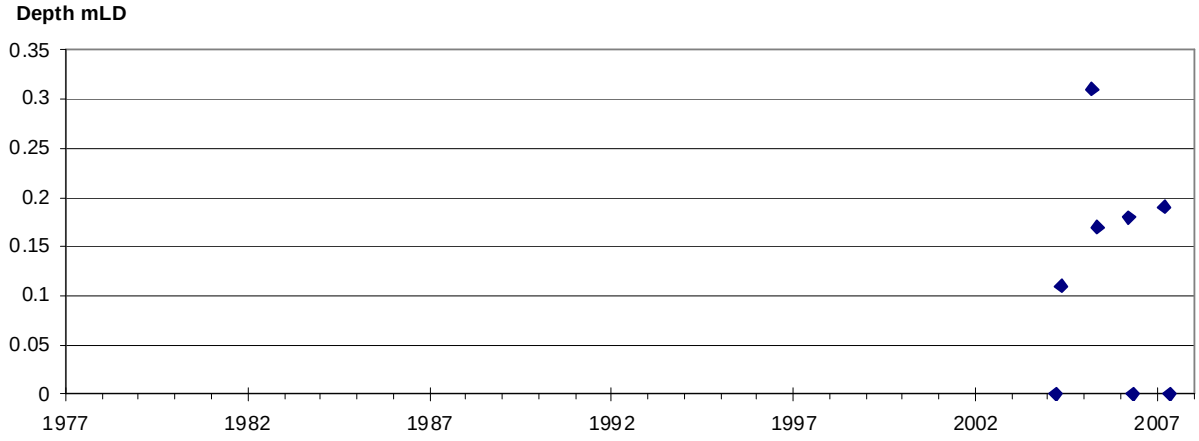
STREETS

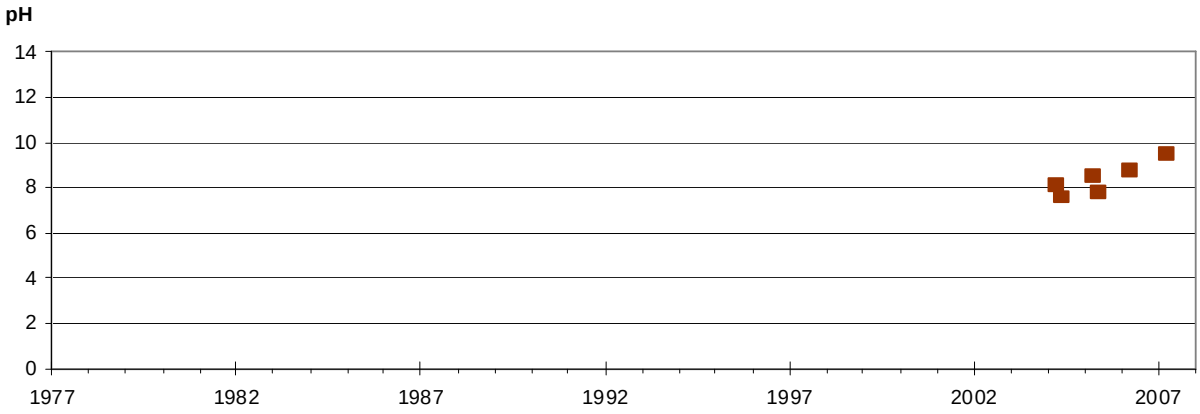


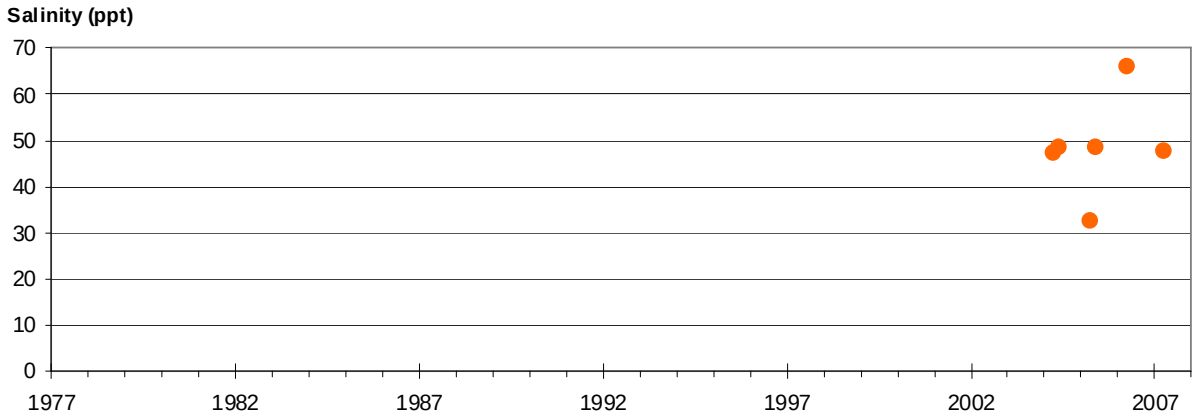


Streets is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

TAARBLIN (NORTH) (C)

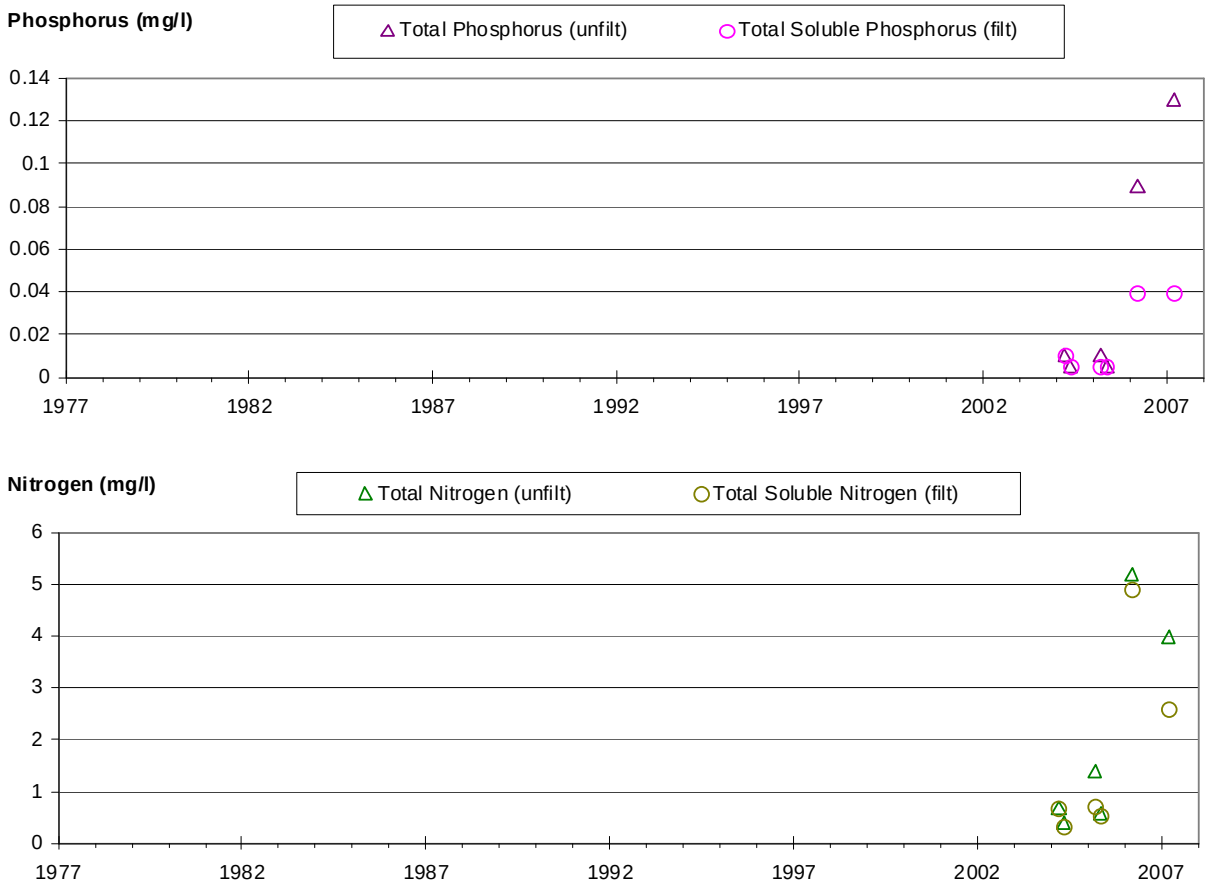






Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

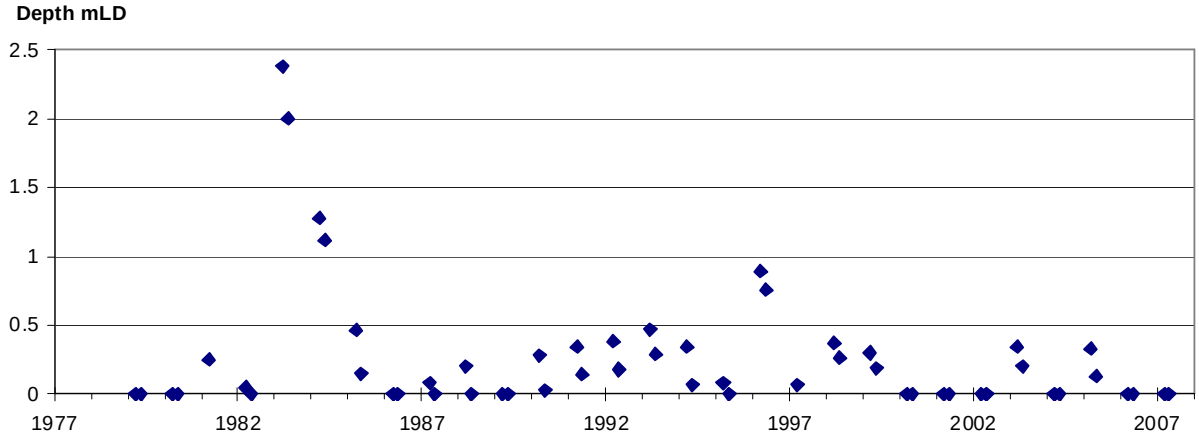
TAARBLIN (NORTH)

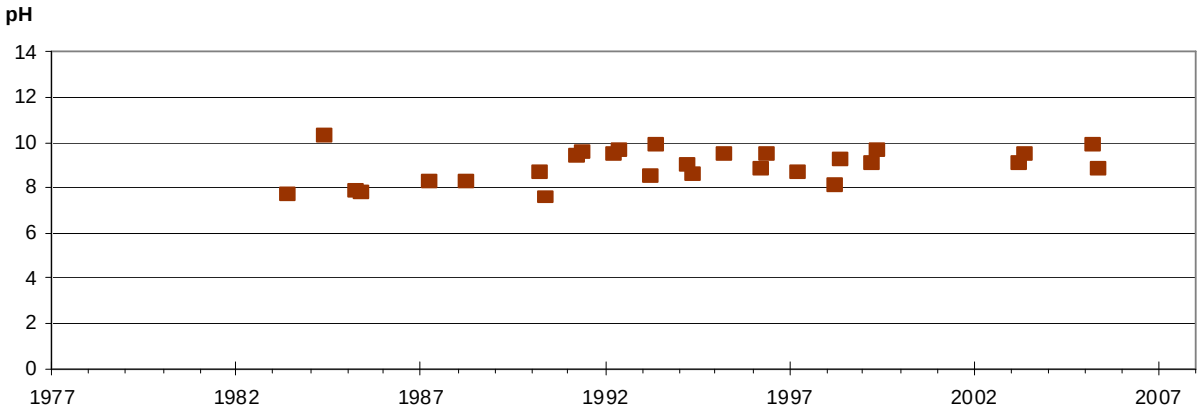


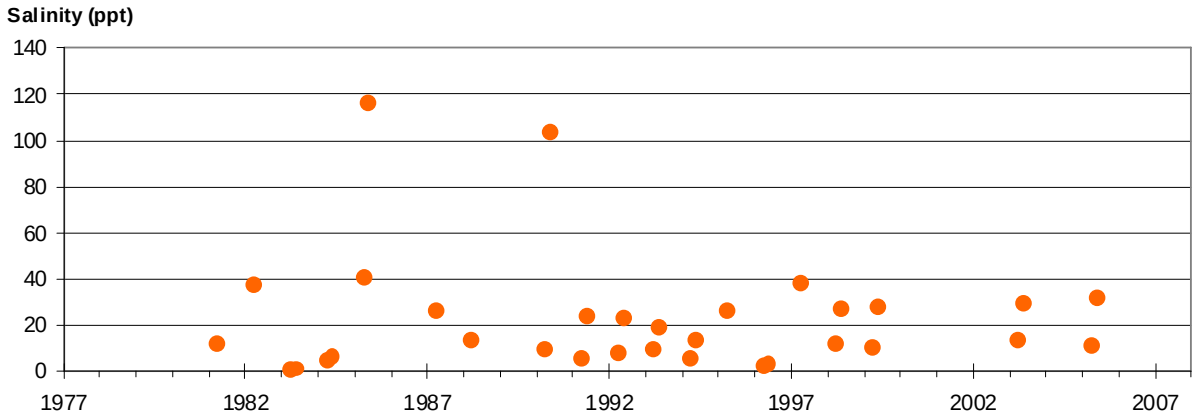
Taarblin (North) is a short distance downstream from, and receives pumped, bypassed and potentially overflow water from, the Toolibin Lake Natural Diversity Recovery Catchment.

Taarblin (North) is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

TAARBLIN (SOUTH) (C)

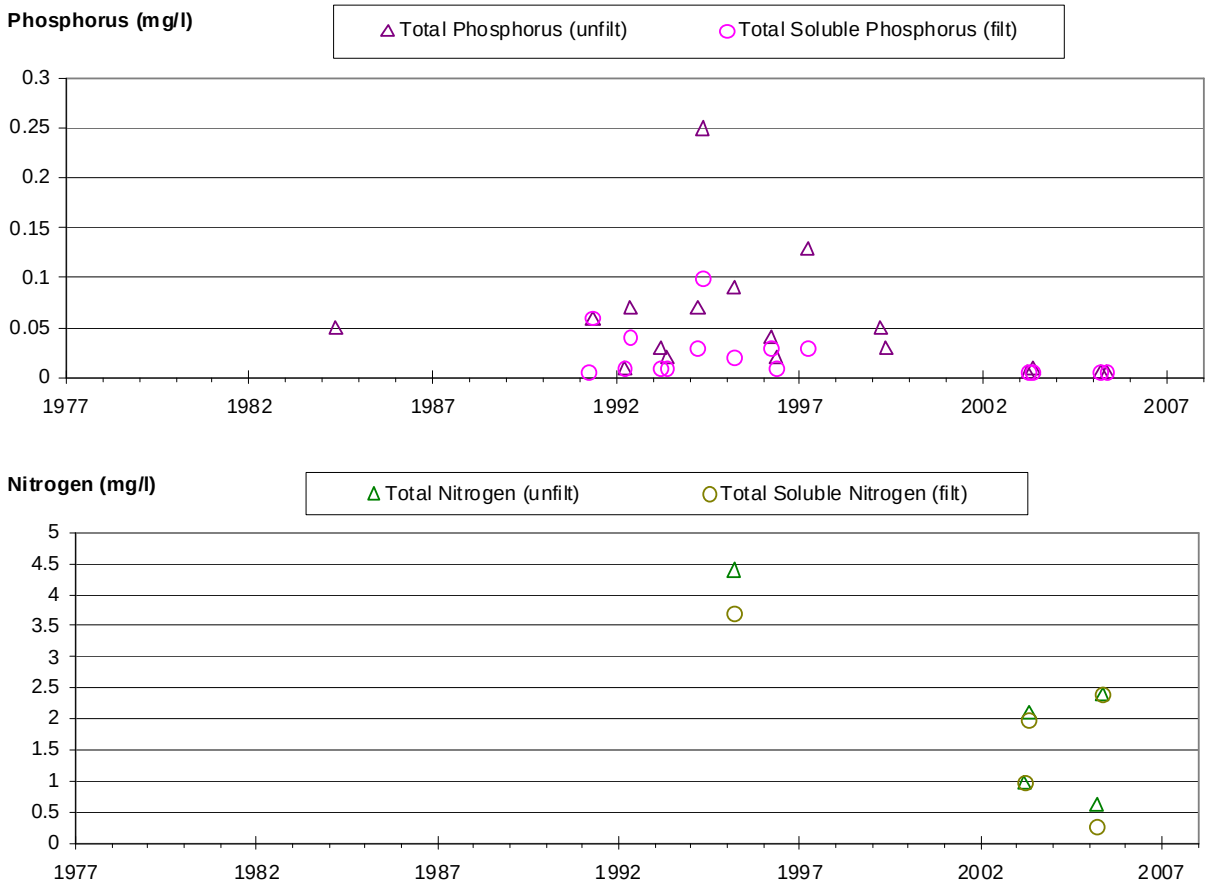






Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

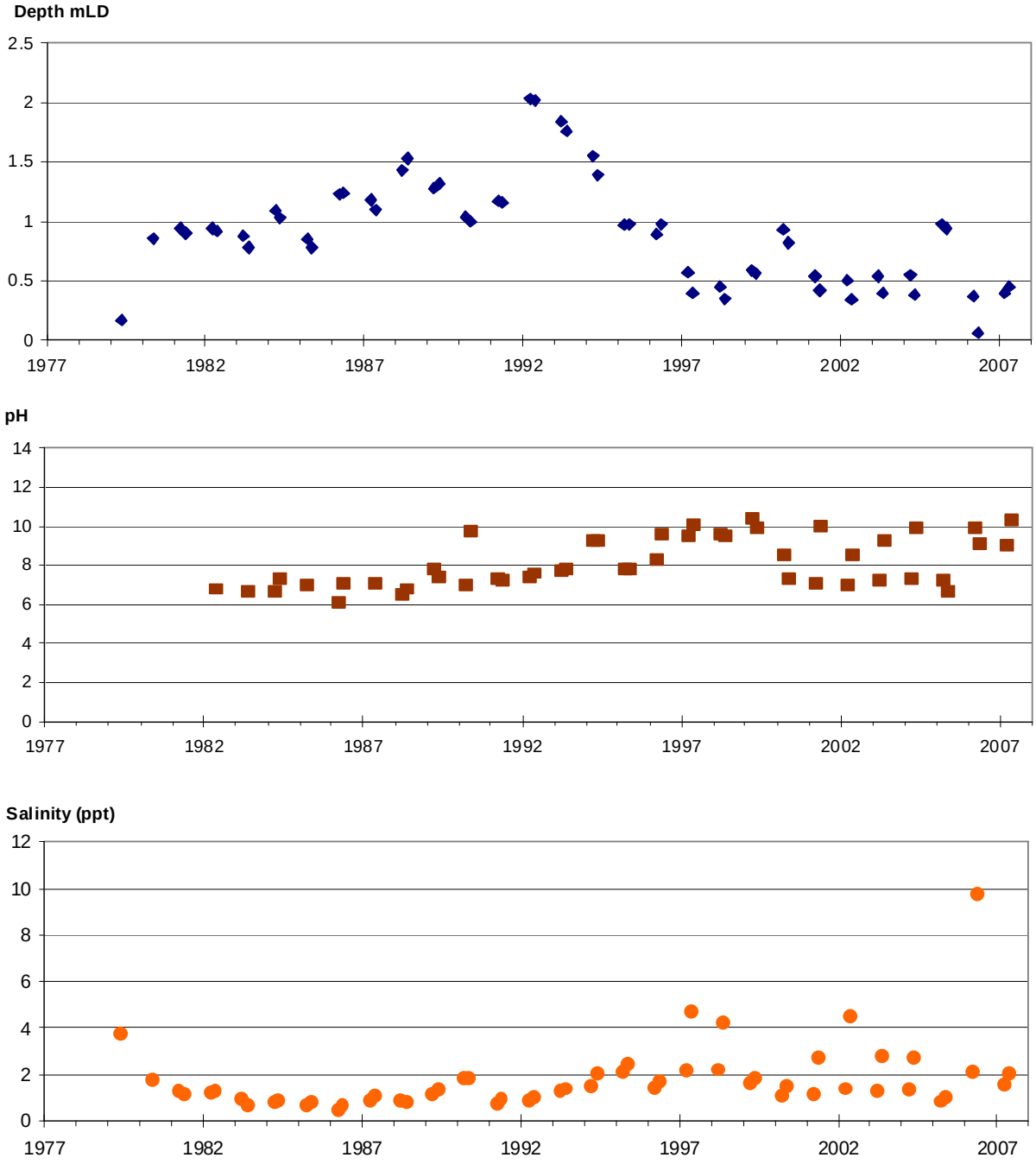
TAARBLIN (SOUTH)



Taarblin (South) is a short distance downstream from, and receives pumped, bypassed and potentially overflow water from, the Toolibin Lake Natural Diversity Recovery Catchment.

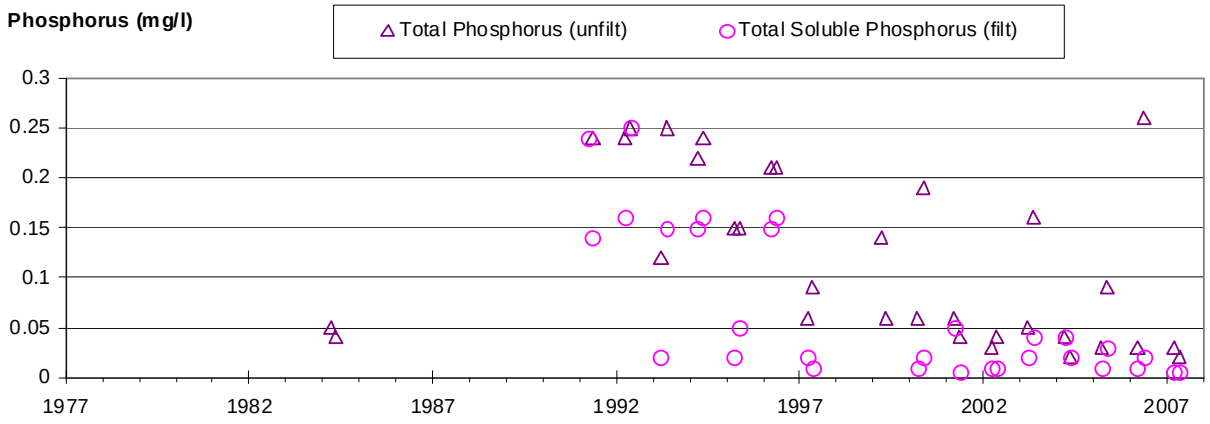
Taarblin (South) is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

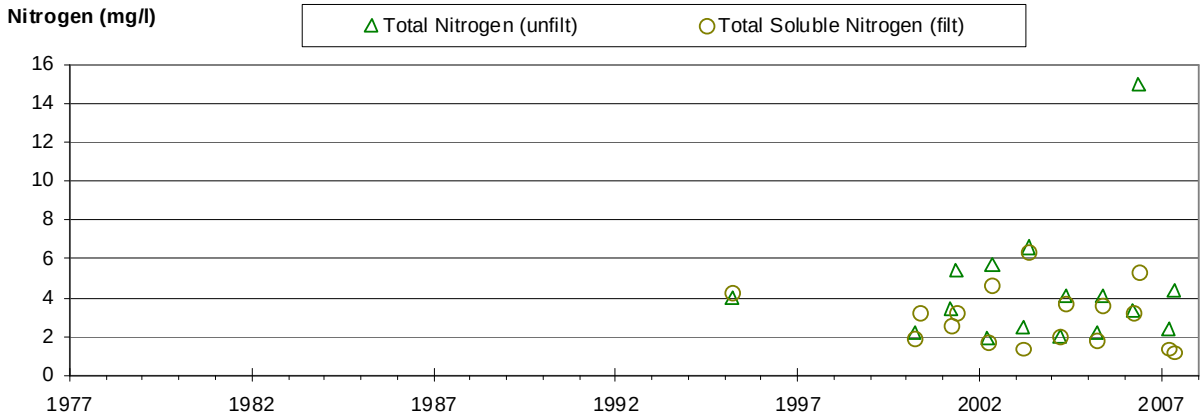
THOMSONS (C)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

THOMSONS



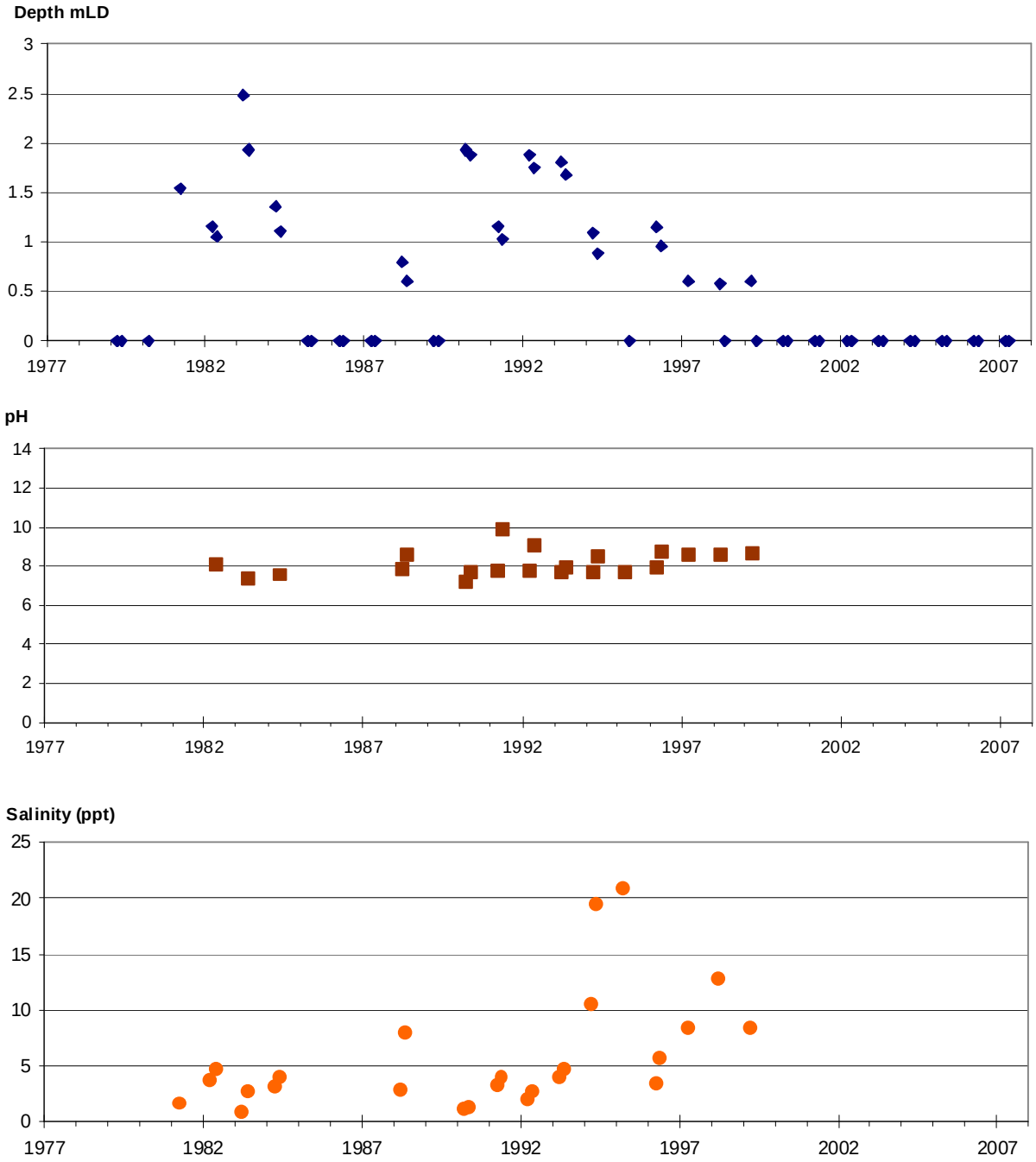


Thomsons Lake is a component of the 'Forrestdale and Thomsons Lakes' system, which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Thomsons Lake is also listed in the 'Directory of Important Wetlands in Australia'.

Thomsons is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

TOOLIBIN (C, IM)



Notes:

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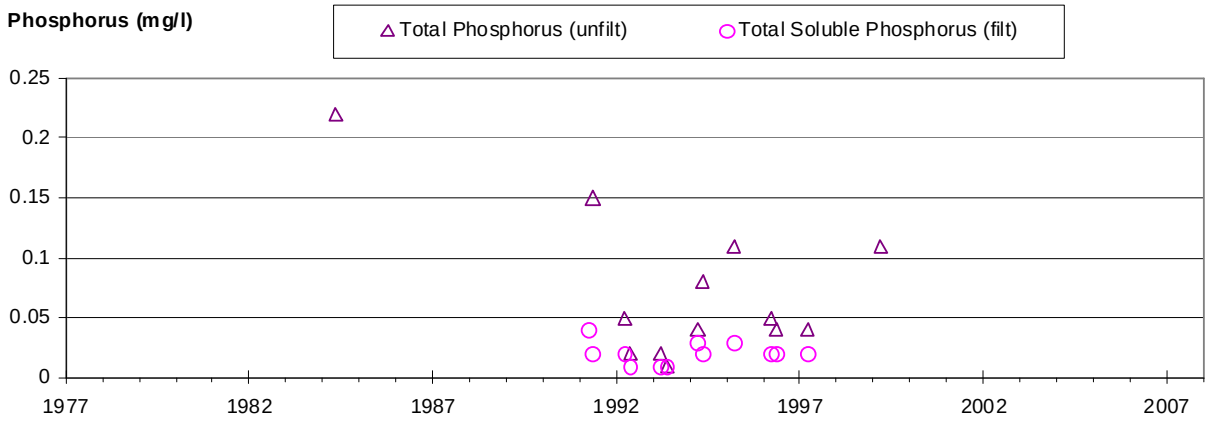
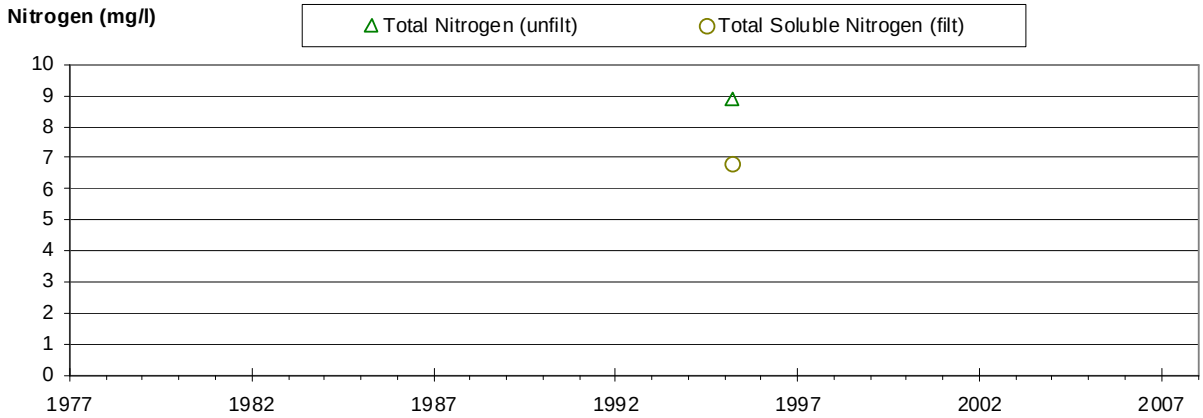
2. Data are from September and November routine monitoring periods only.

TOOLIBIN





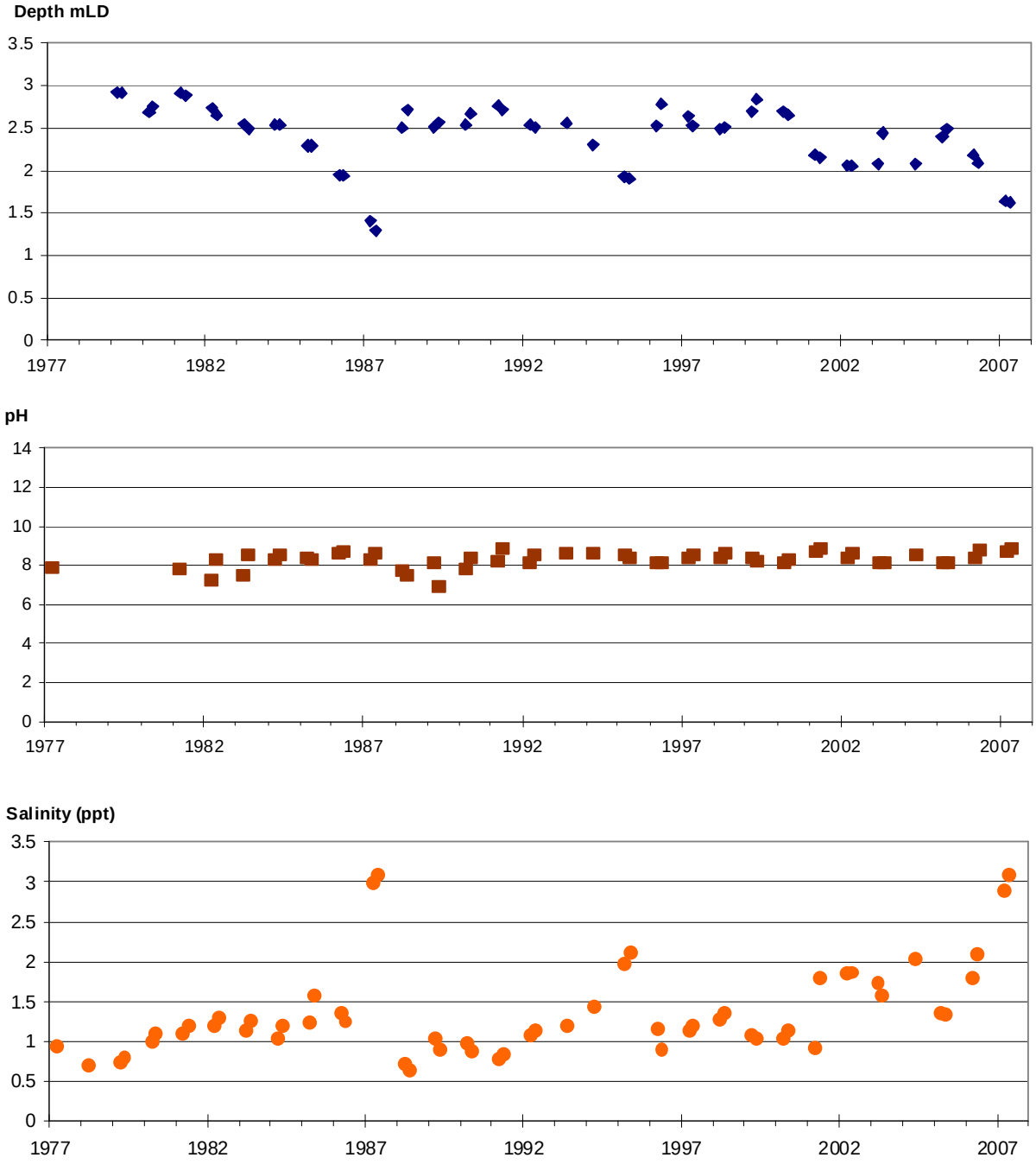
Toolibin Lake is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Toolibin Lake is also listed in the 'Directory of Important Wetlands in Australia'.

Toolibin is in the Toolibin Lake Natural Diversity Recovery Catchment.

Toolibin is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

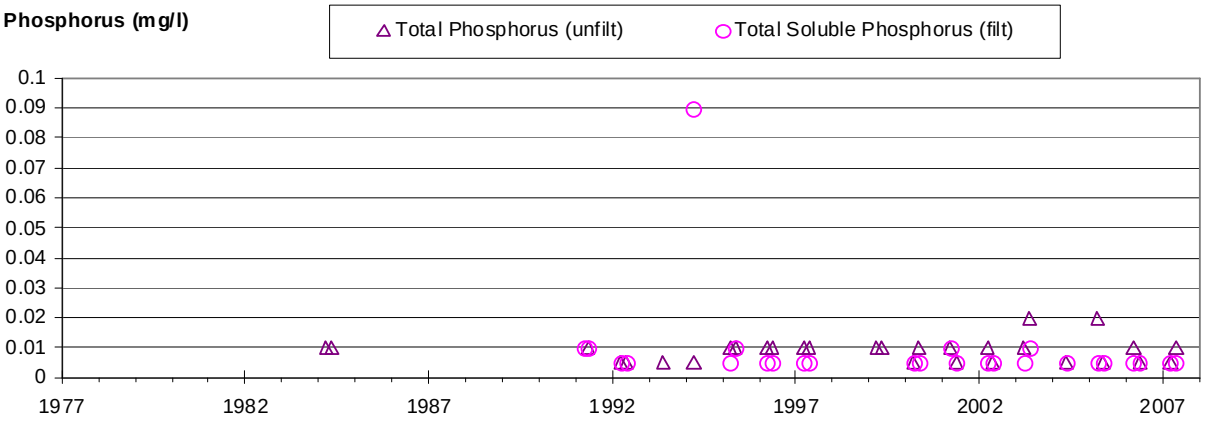
TORDIT-GURRUP (C)

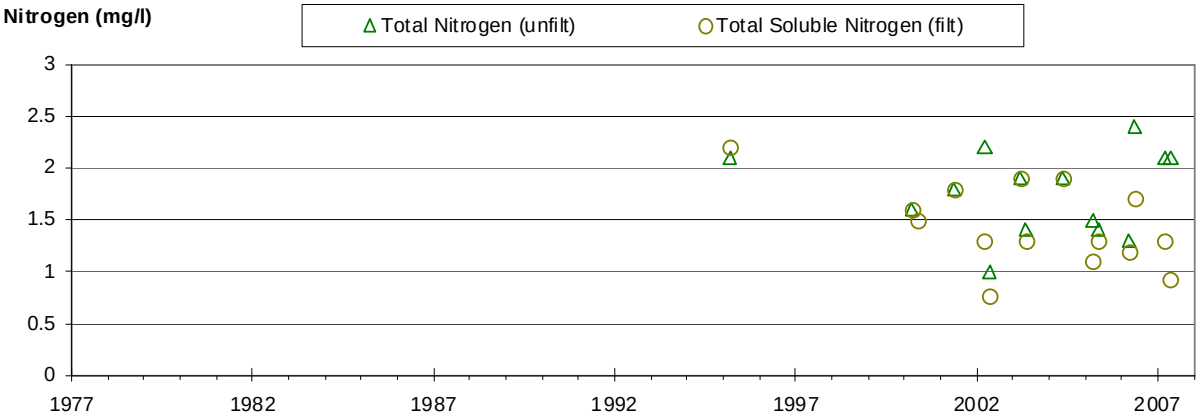


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

TORDIT-GURRUP





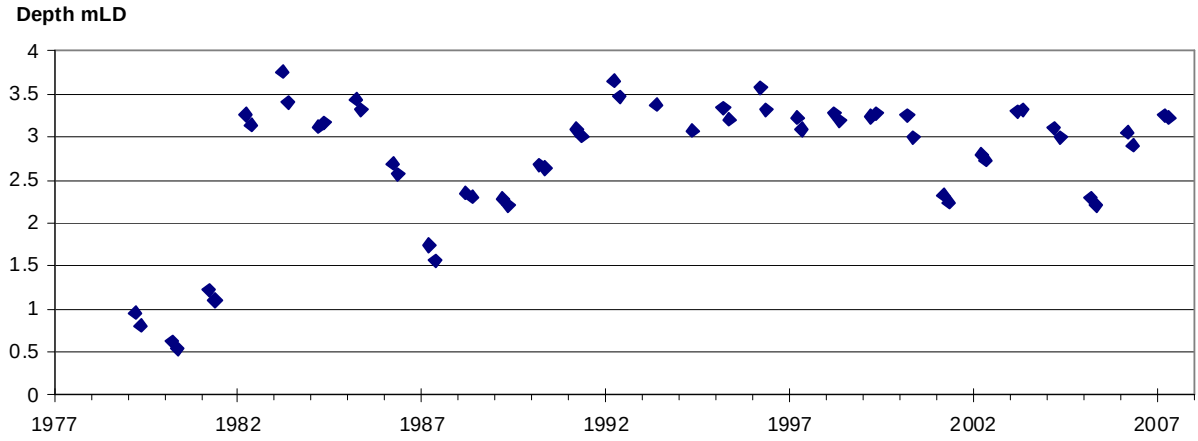
Tordit-Gurrup is a component of the 'Muir-Byenup System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

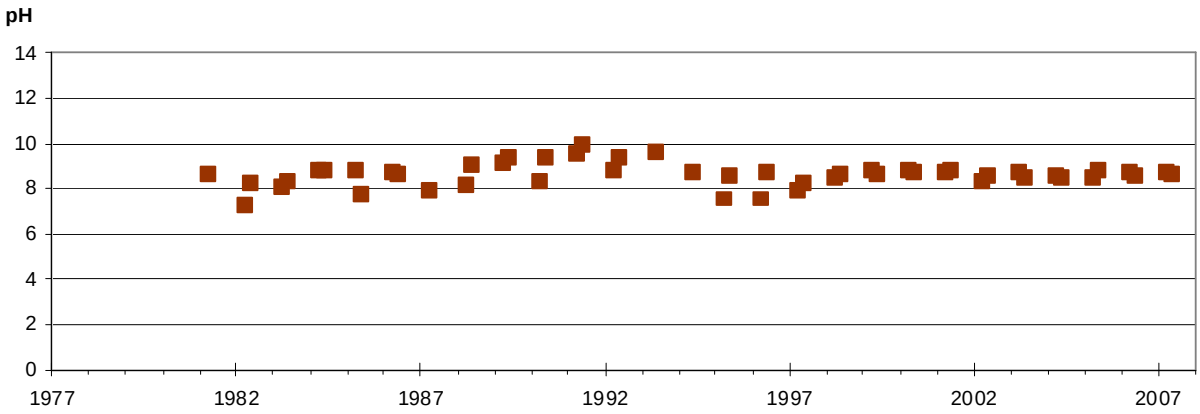
Tordit-Gurrup is also a component of the 'Byenup Lagoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

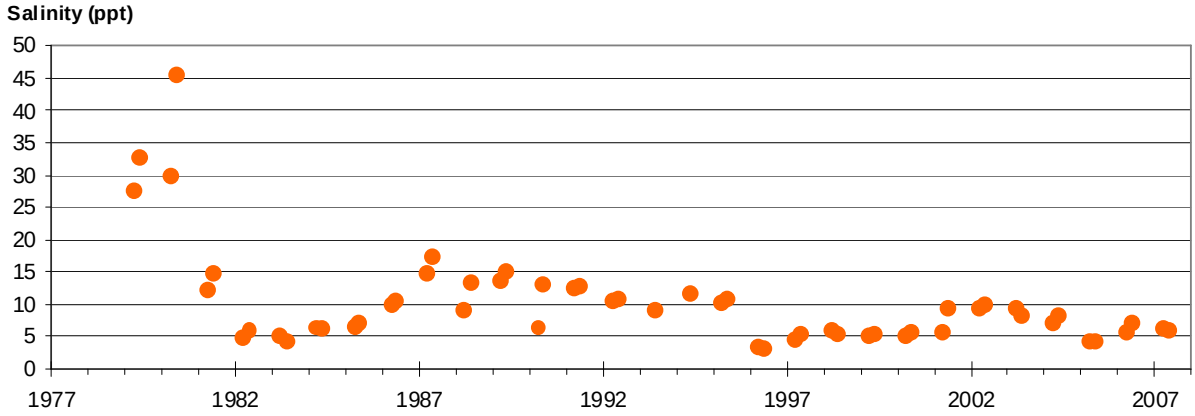
Tordit-Gurrup is within the Muir-Unicup Natural Diversity Recovery Catchment.

Tordit-Gurrup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

TOWERRINNING (C, IM)







Notes:

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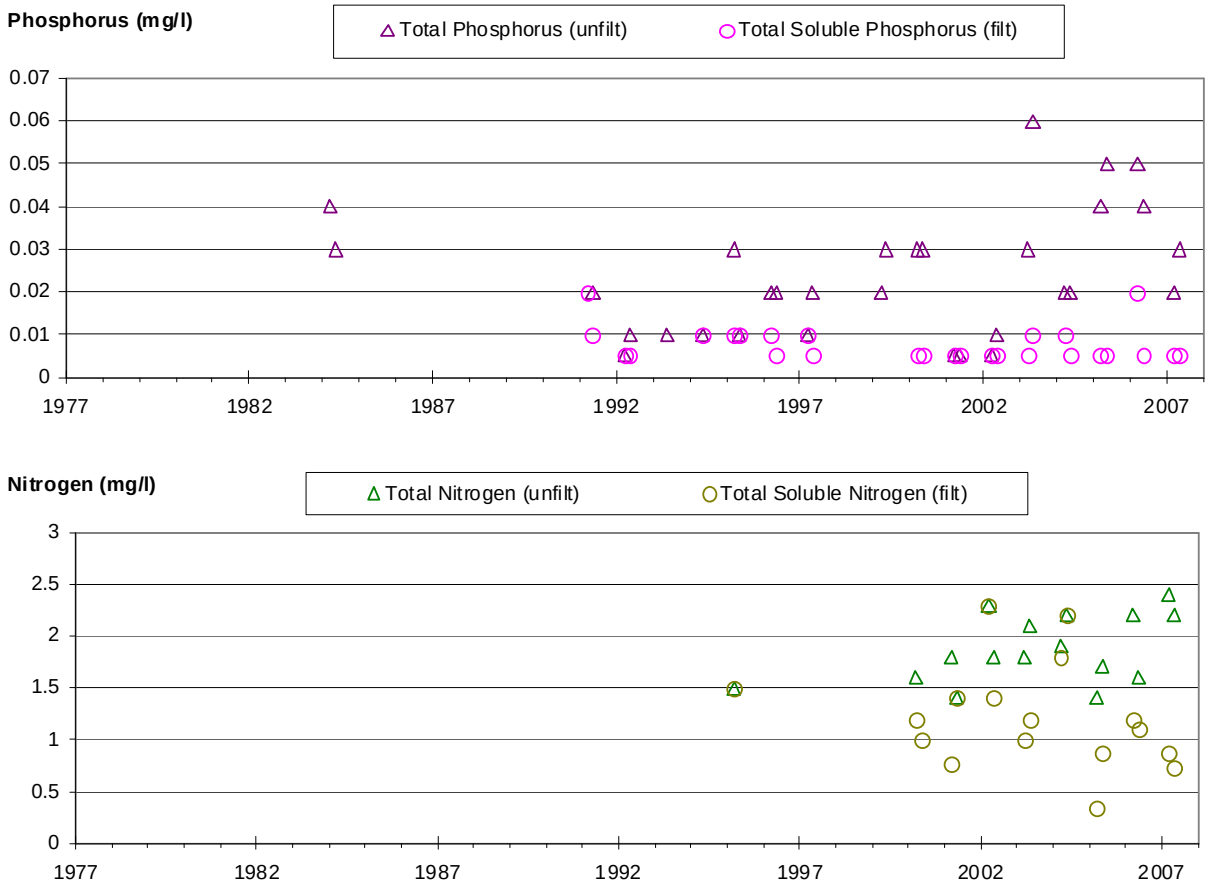
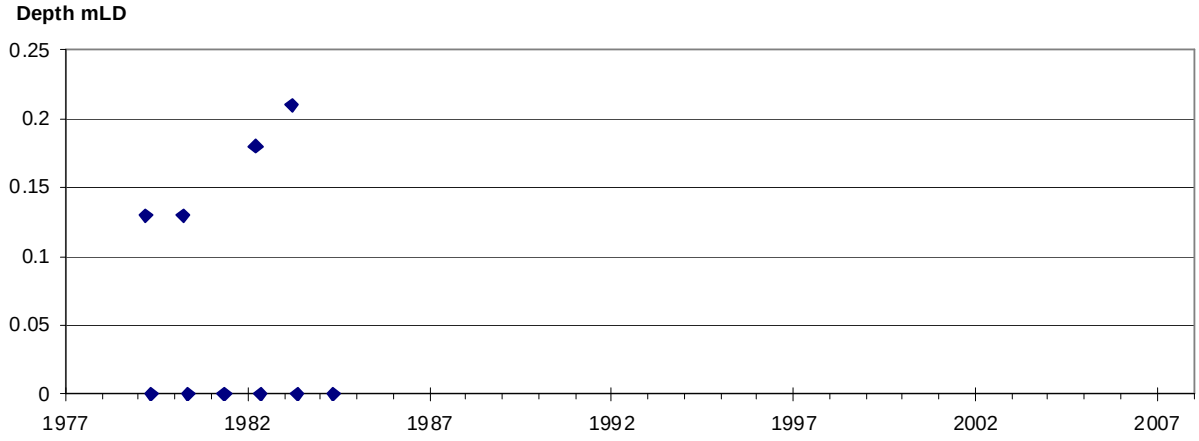
2. Data are from September and November routine monitoring periods only.

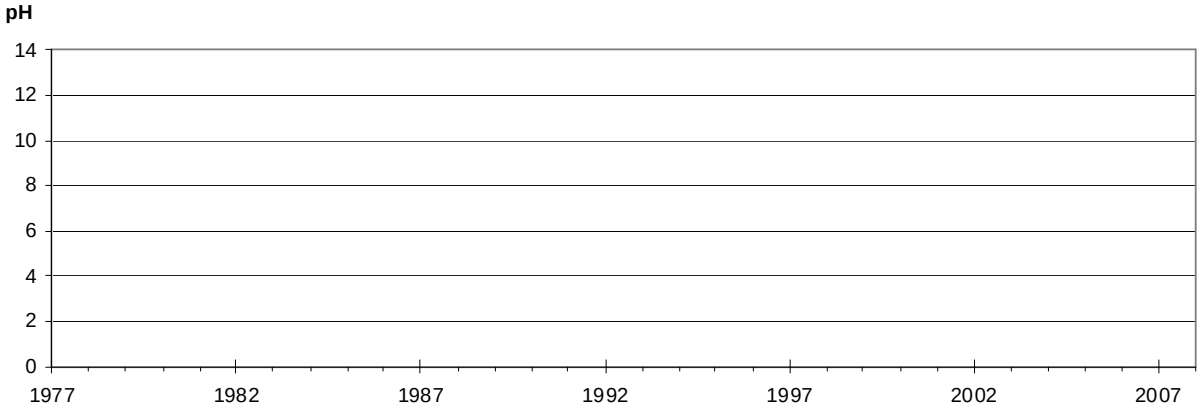
TOWERRINNING

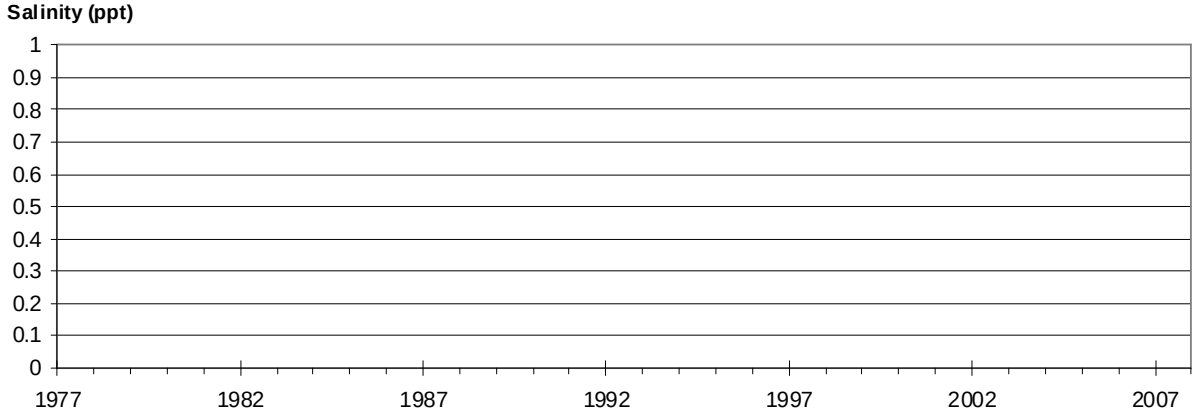


Towerrinning is in the Wellington District (headquartered in Collie) of the South West DEC Region.

TWIN SWAMPS N-W (H)

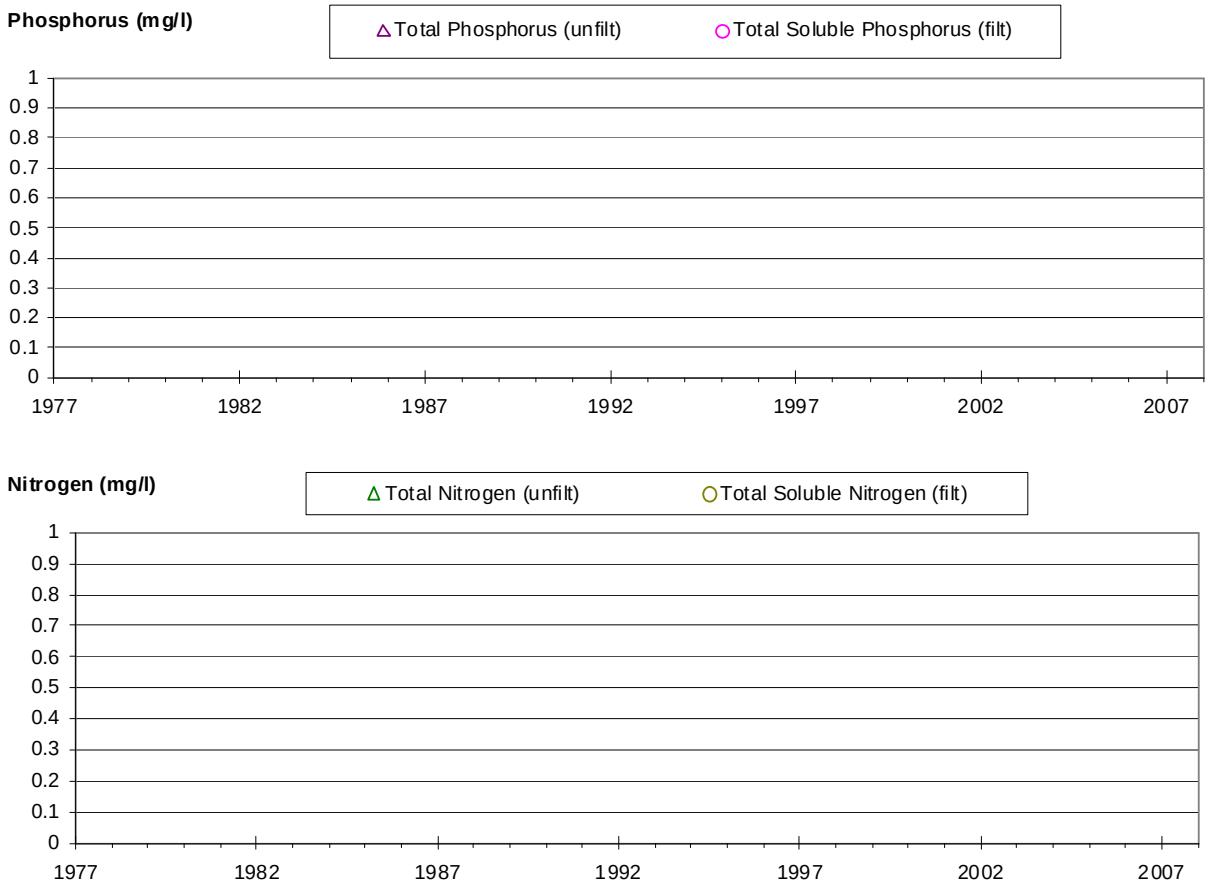






Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

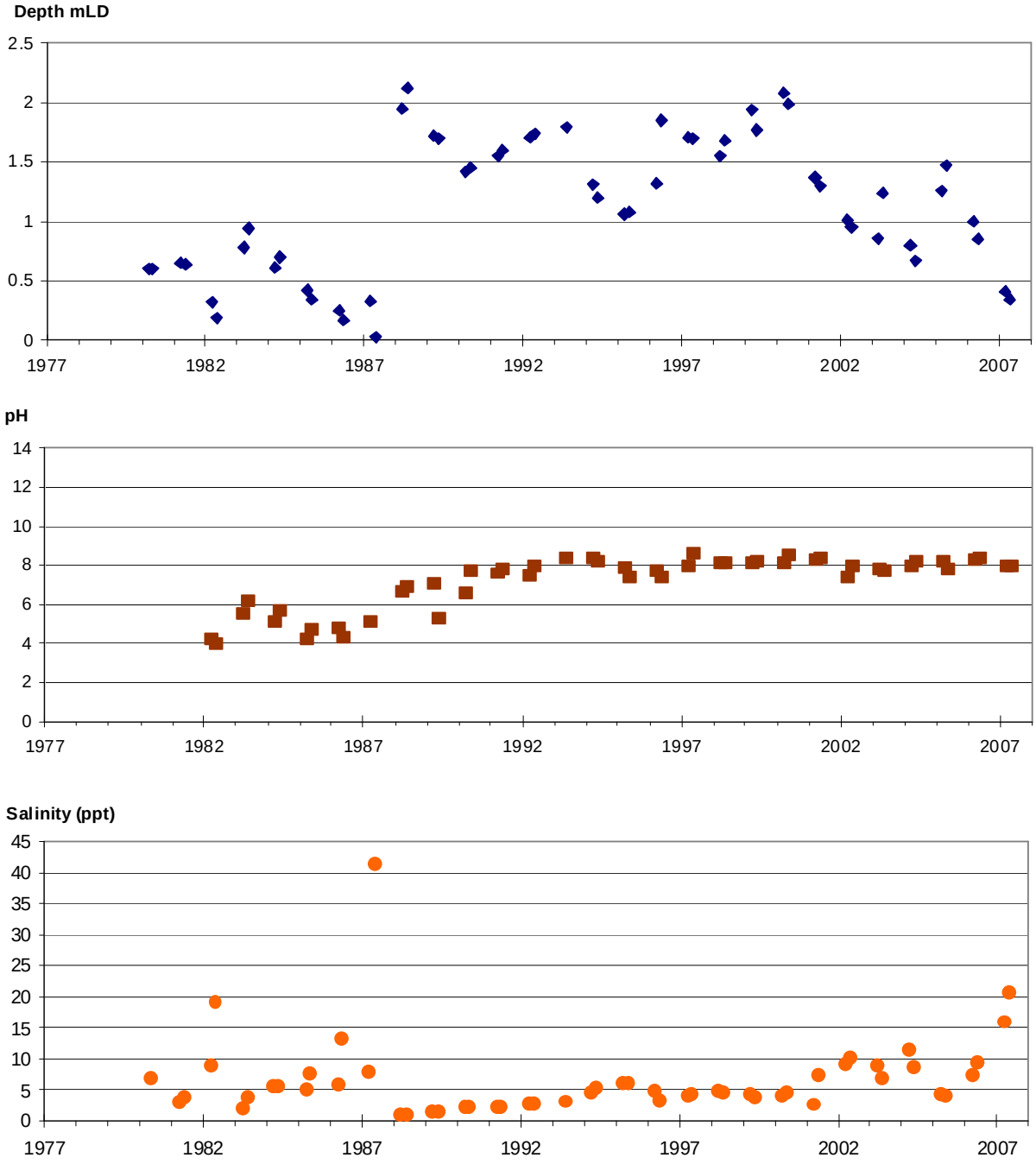
TWIN SWAMPS N-W



Twin Swamps N-W is a component of the 'Ellen Brook Swamps System', which is listed in the 'Directory of Important Wetlands in Australia'.

Twin Swamps N-W is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

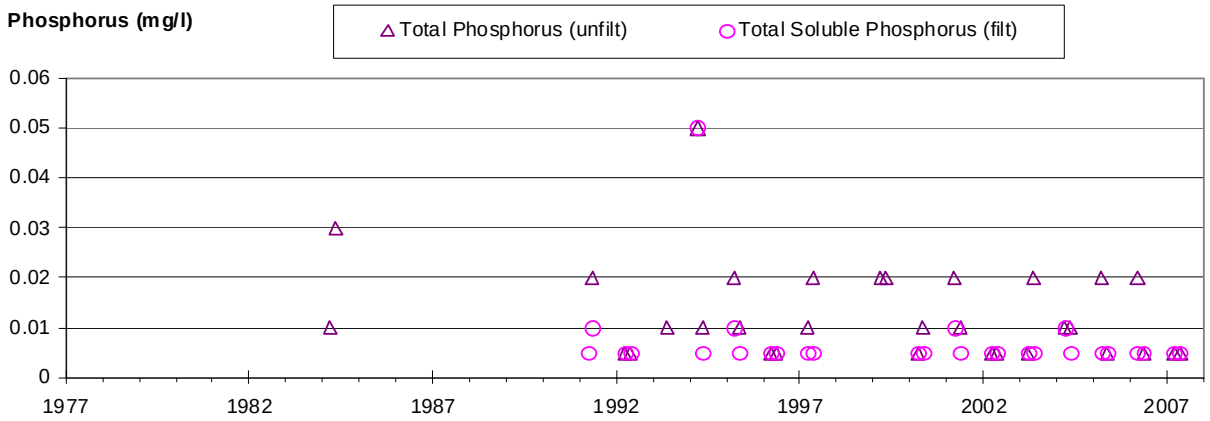
UNICUP (C)

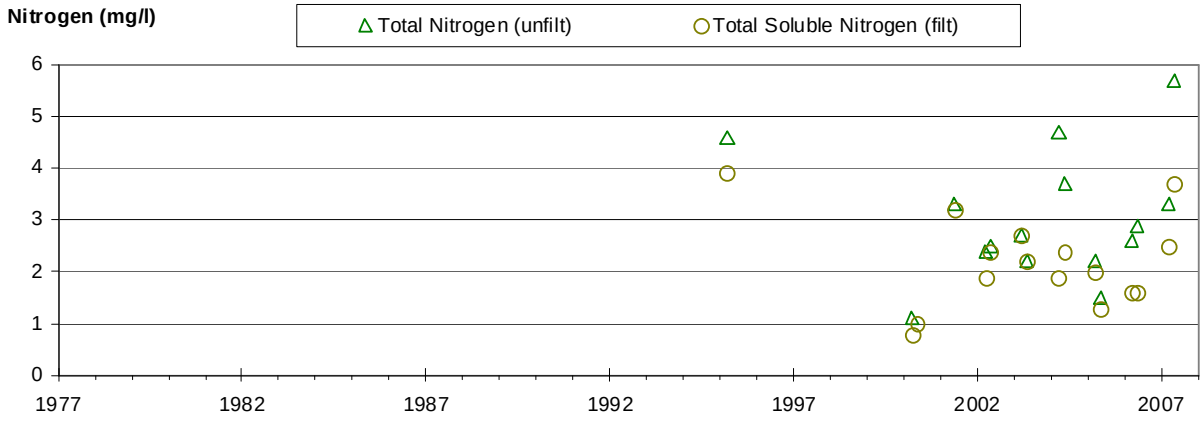


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

UNICUP



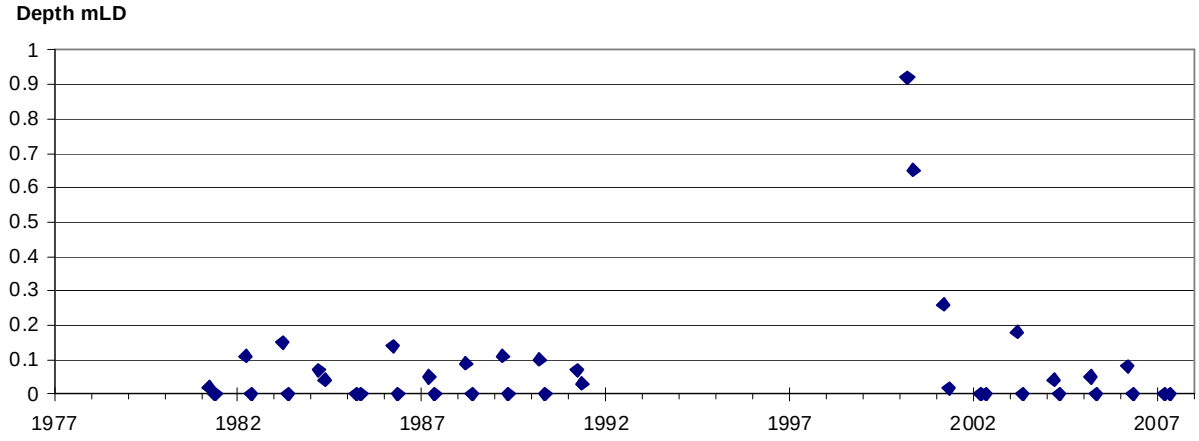


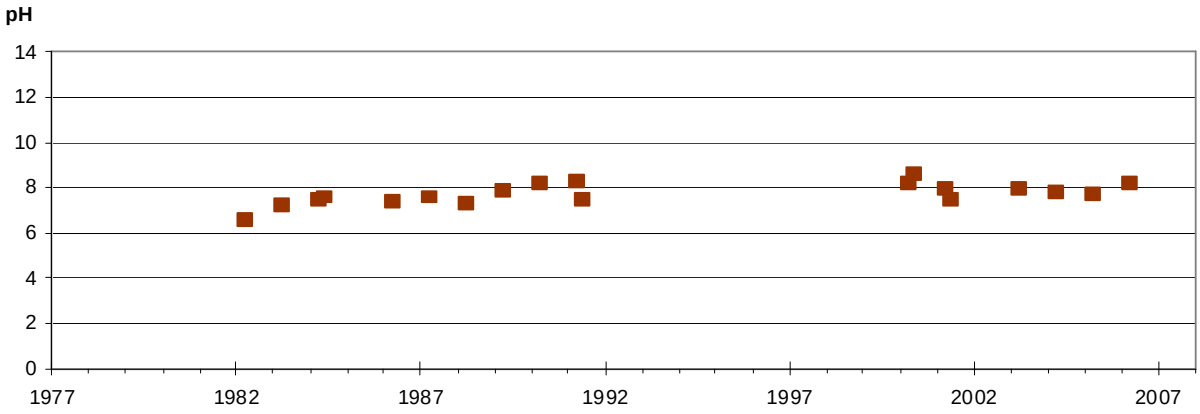
Unicup is a component of the 'Byenup Lagoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

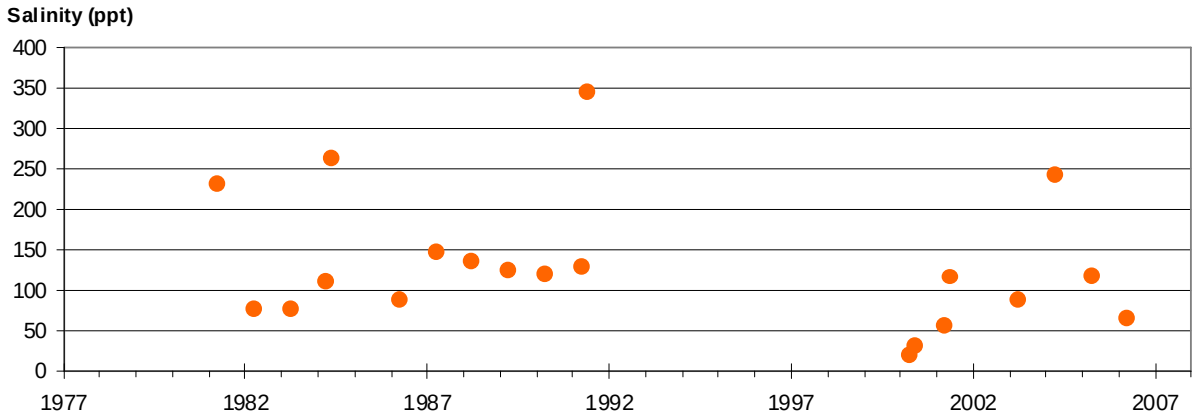
Unicup is within the Muir-Unicup Natural Diversity Recovery Catchment.

Unicup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

VARLEY (C)







Notes:
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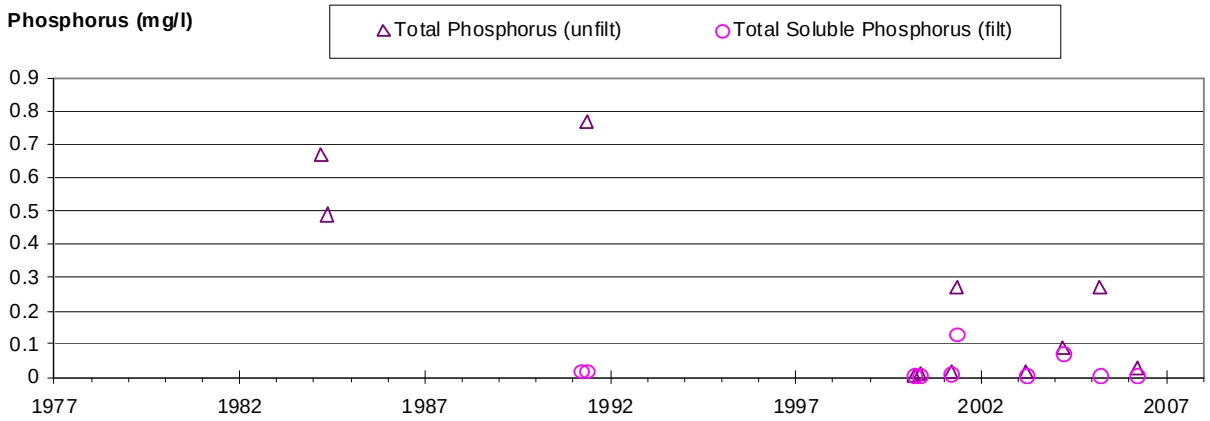
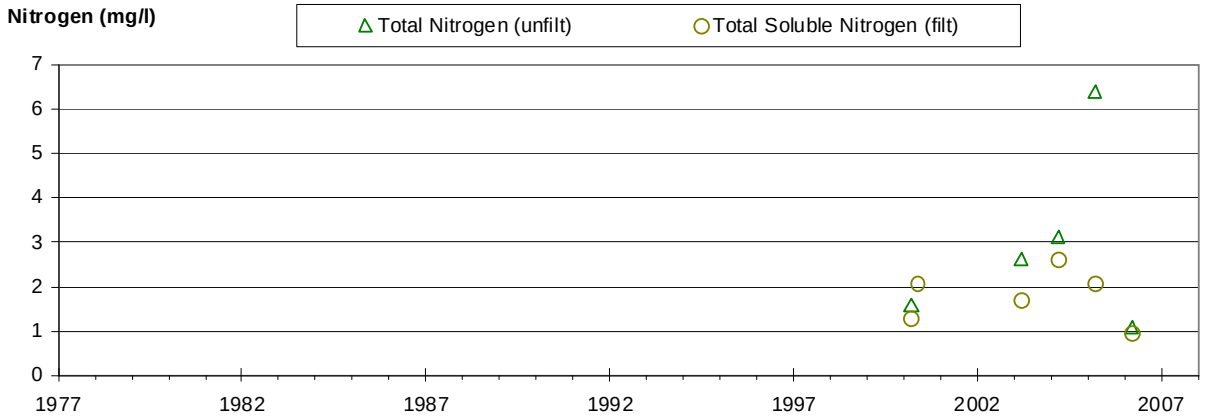
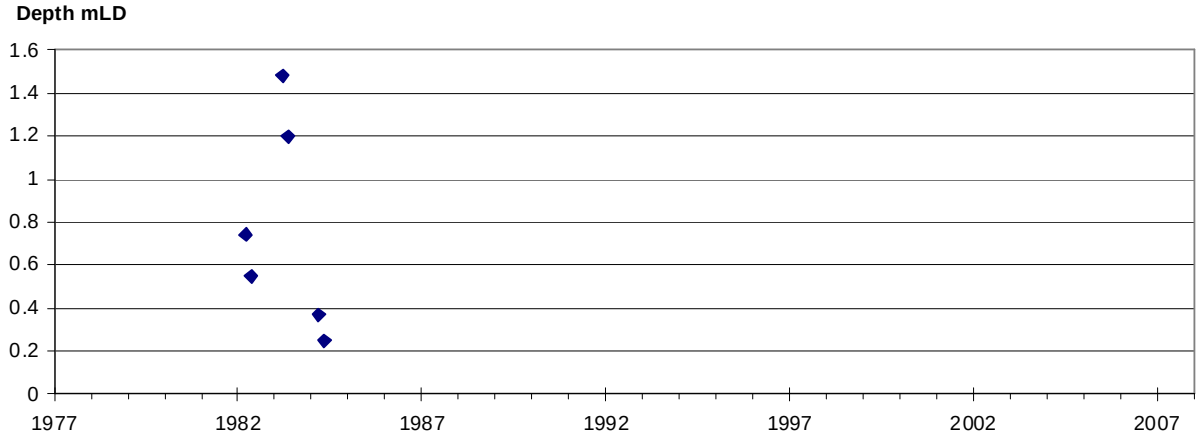
VARLEY

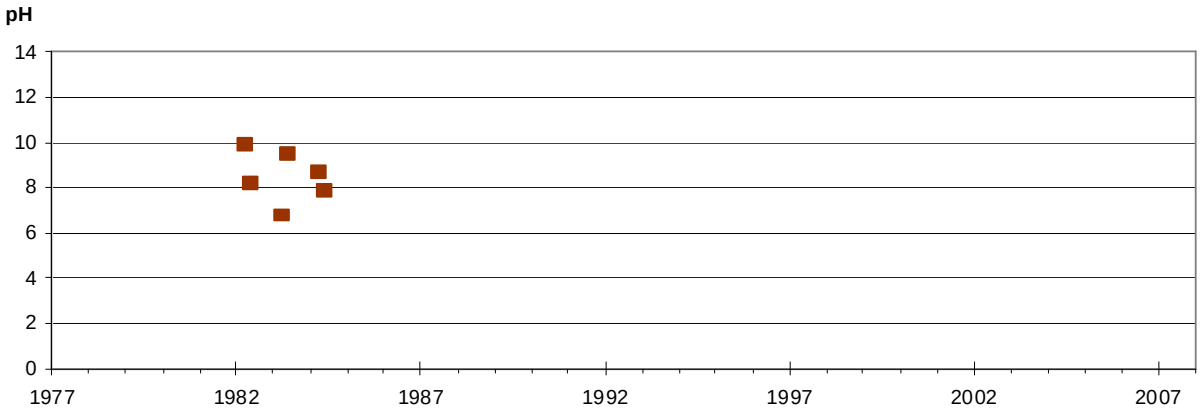


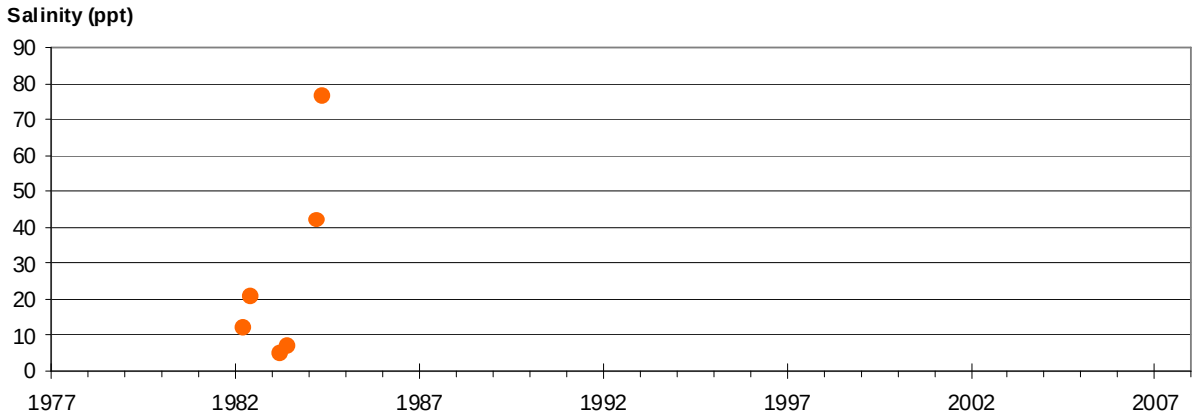


Varley is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WAGIN 2088 (H)







Notes:
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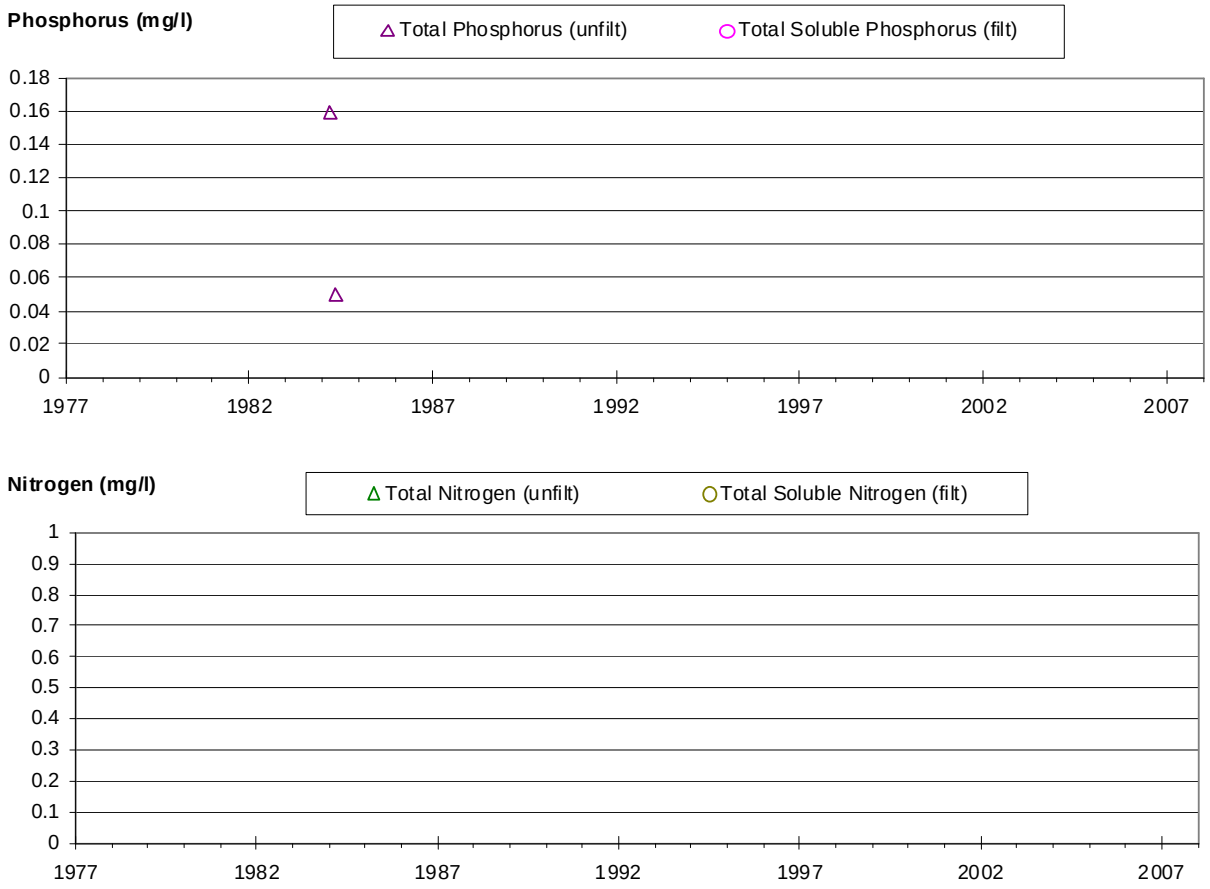
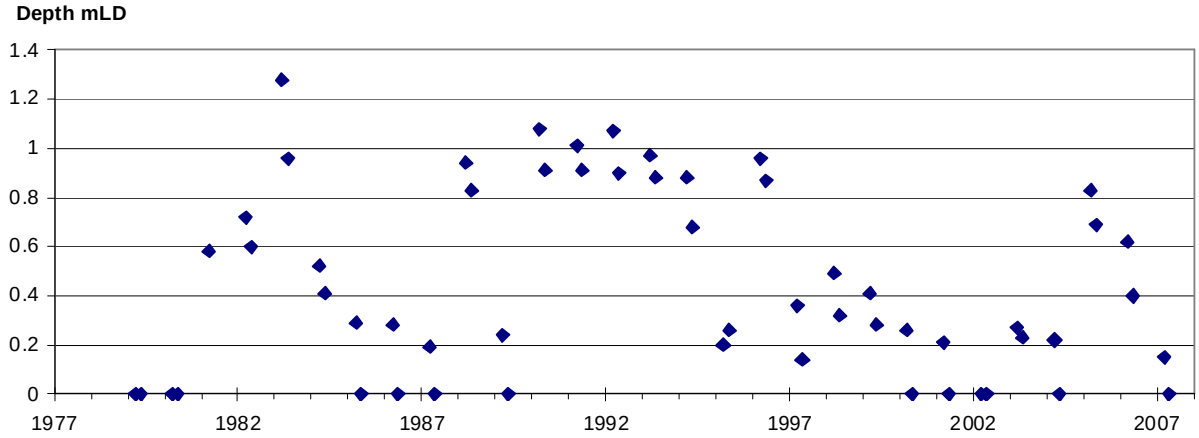
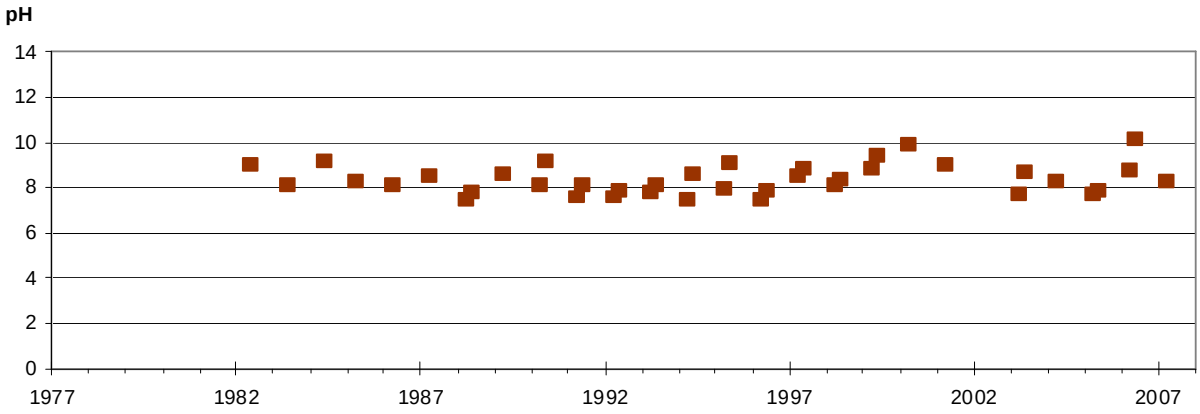
WAGIN 2088

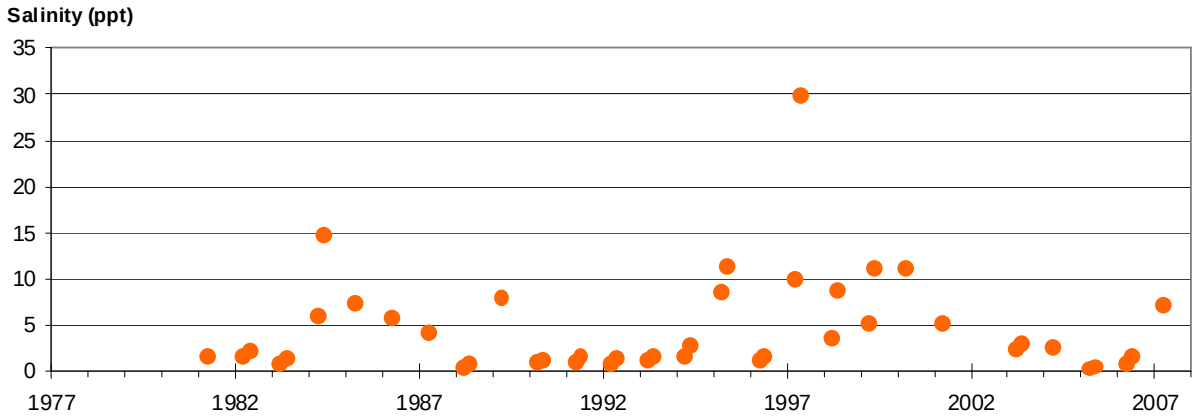


Wagin 2088 is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WALBYRING (C)







Notes:
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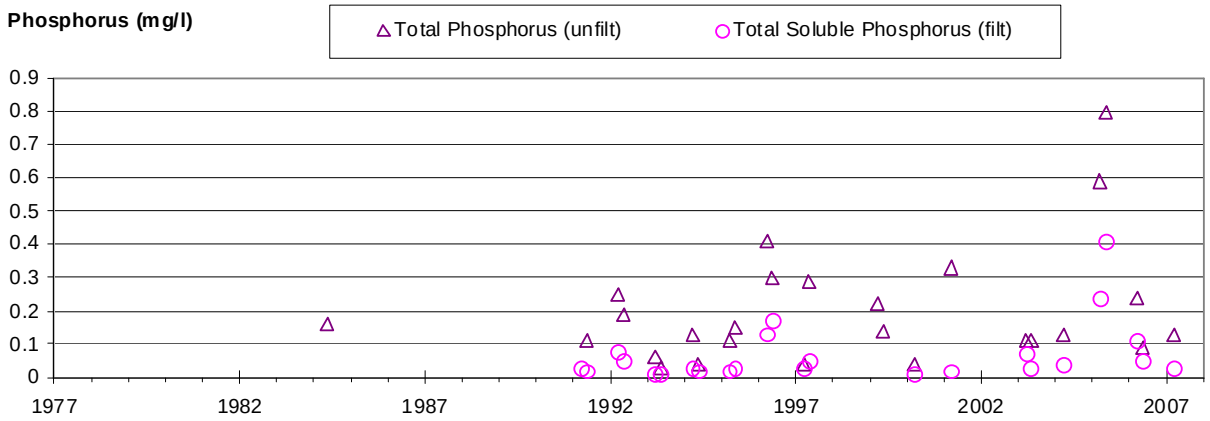
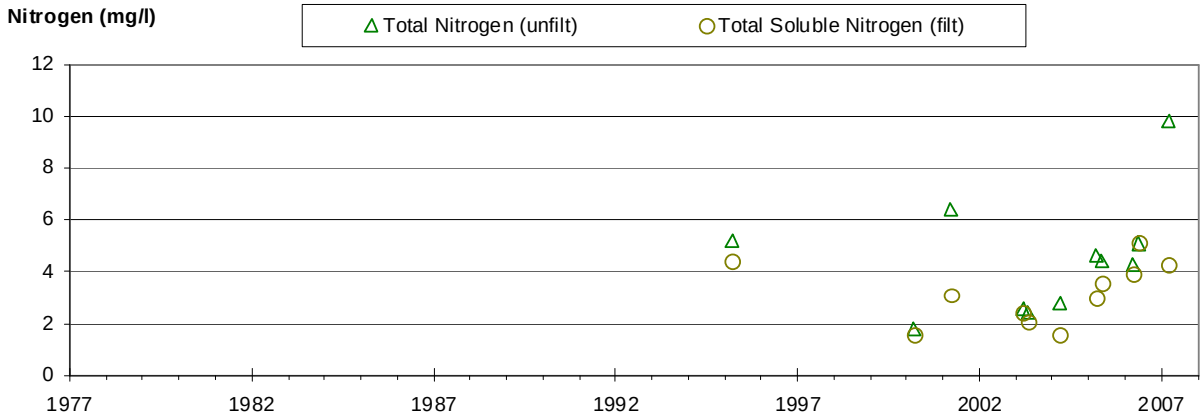
WALBYRING

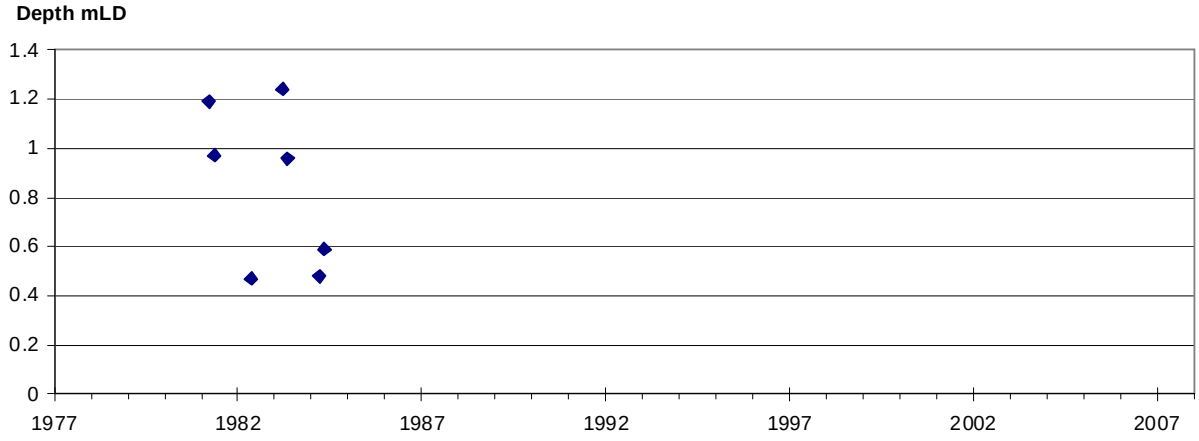


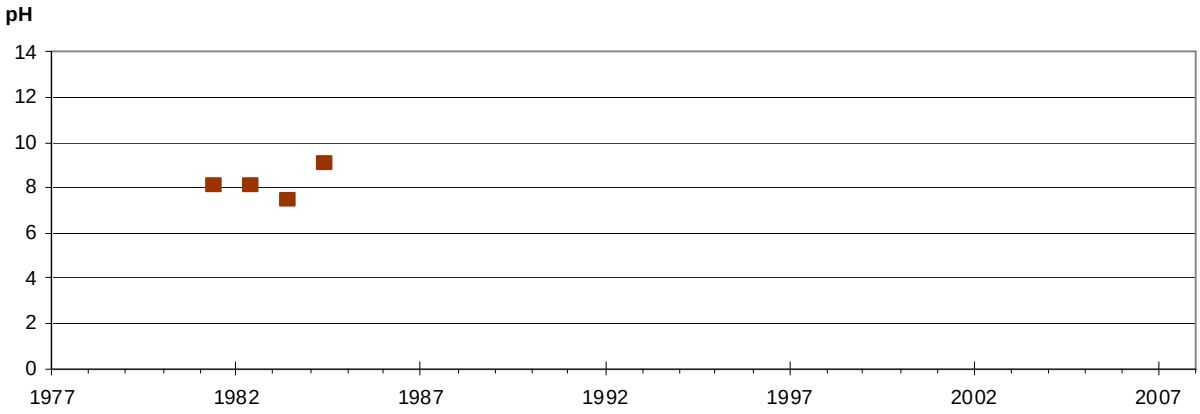


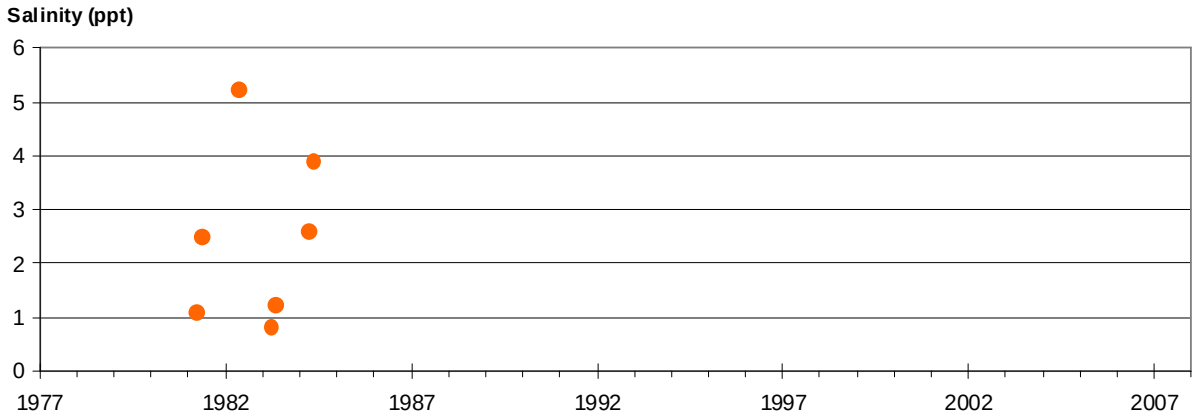
Walbyring is a short distance downstream from, and potentially receives overflow water from, the Toolibin Lake Natural Diversity Recovery Catchment.

Walbyring is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WALLERING (H)







Notes:
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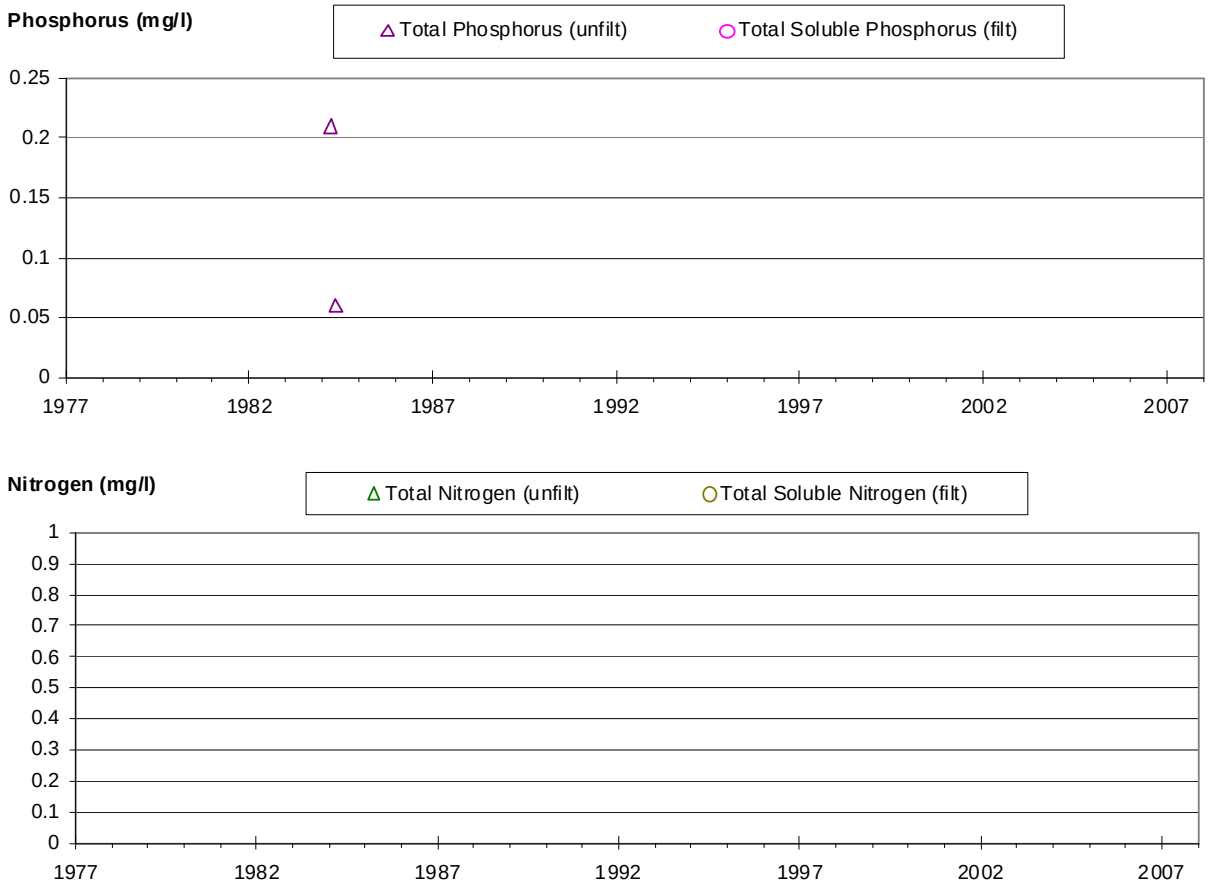
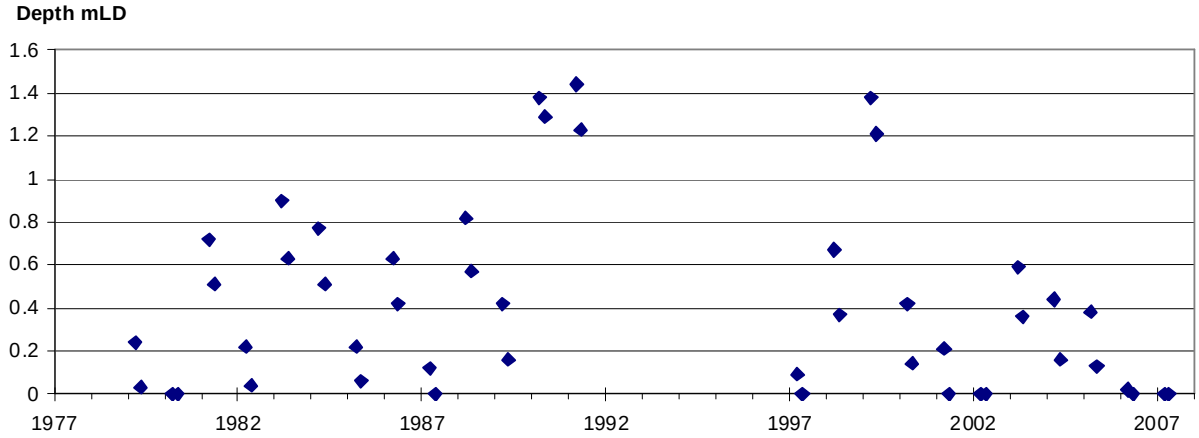
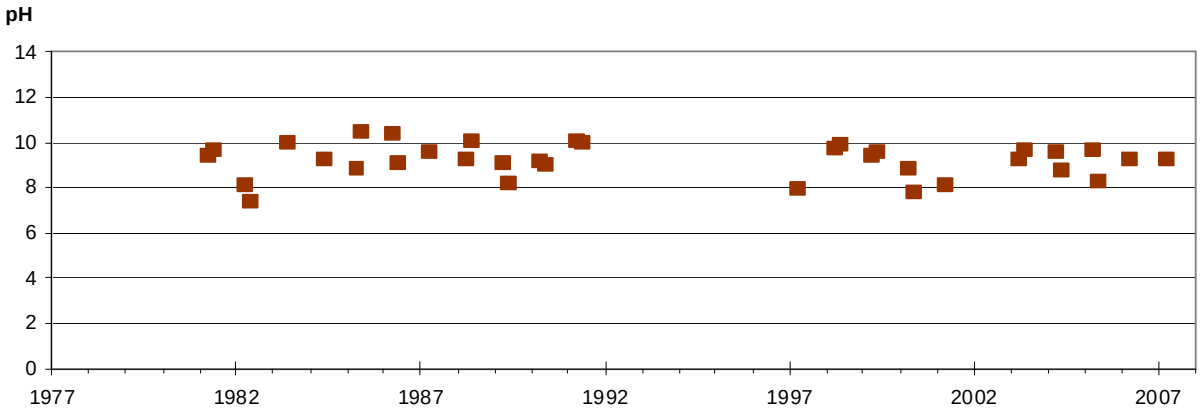
WALLERING

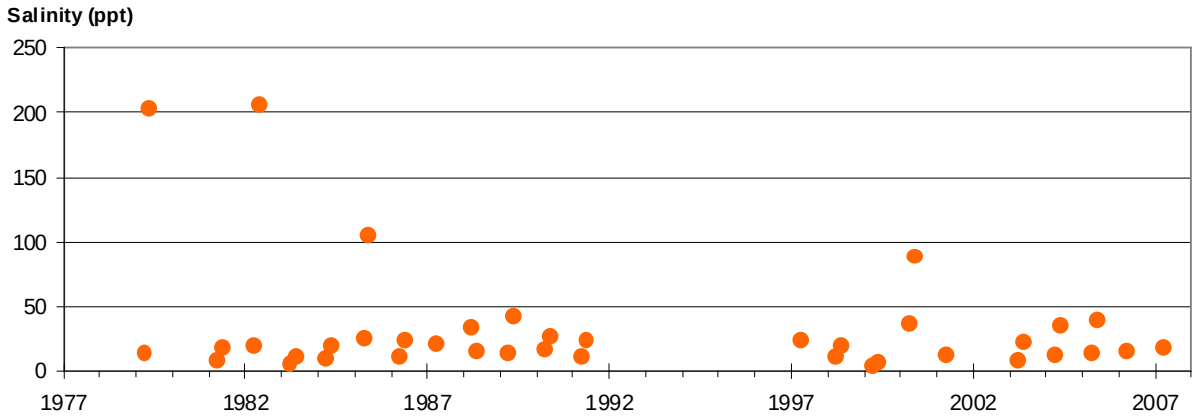


Wallering is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

WALYORMOURING (C, IM)







Notes:
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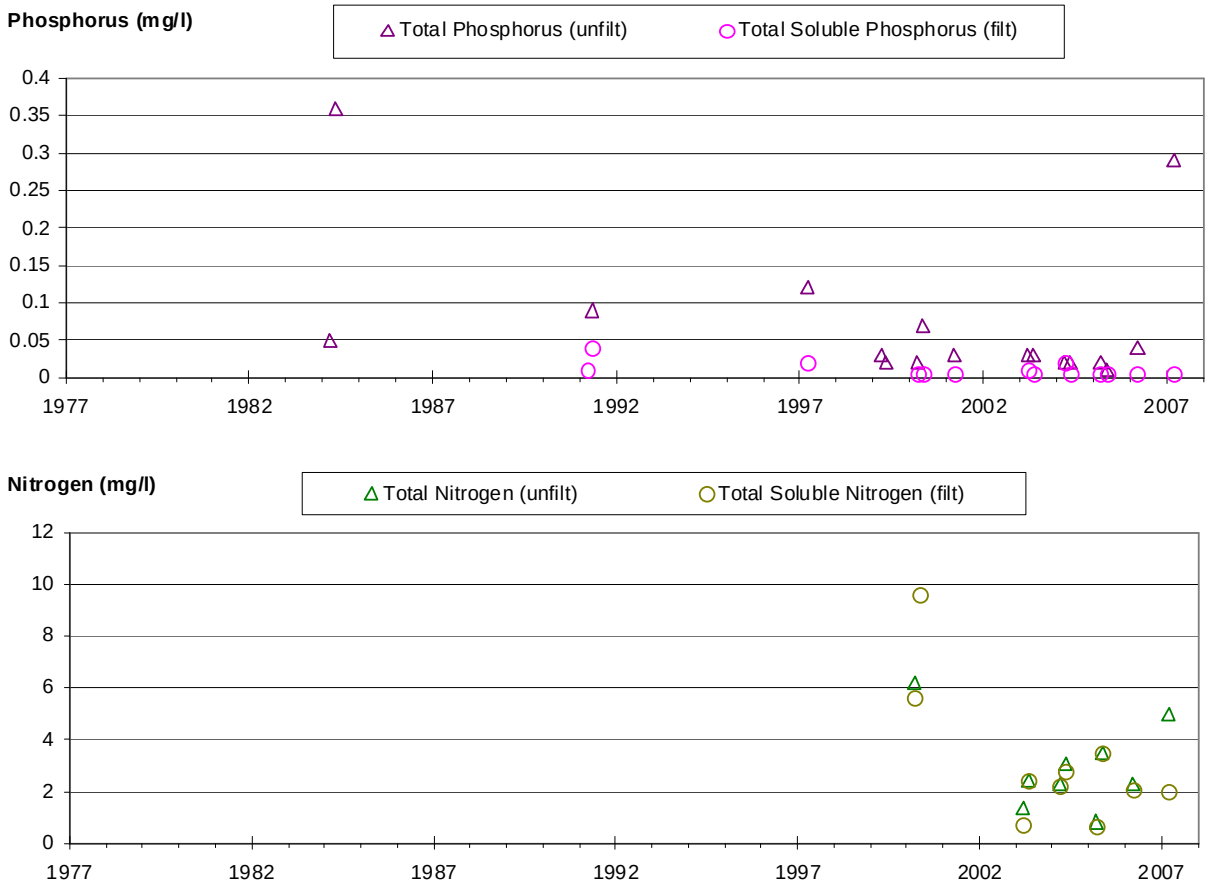
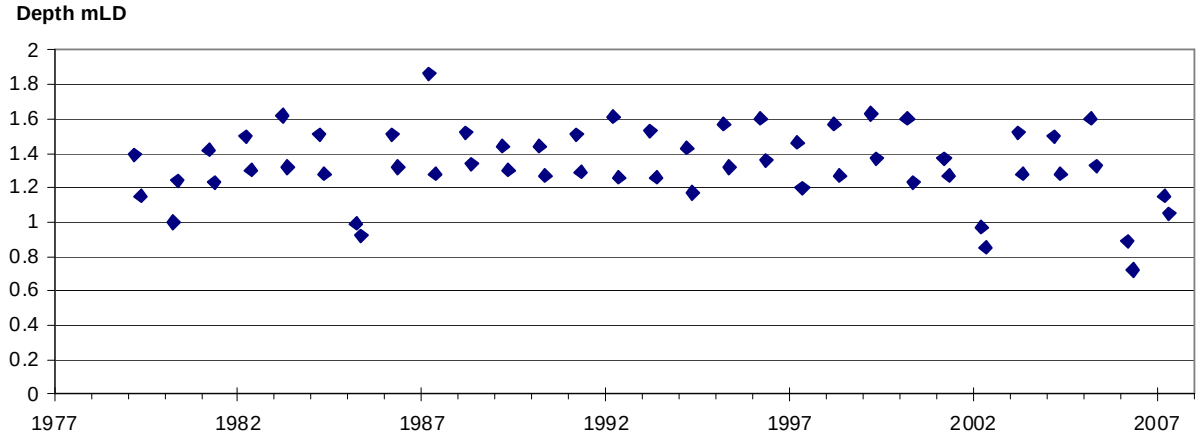
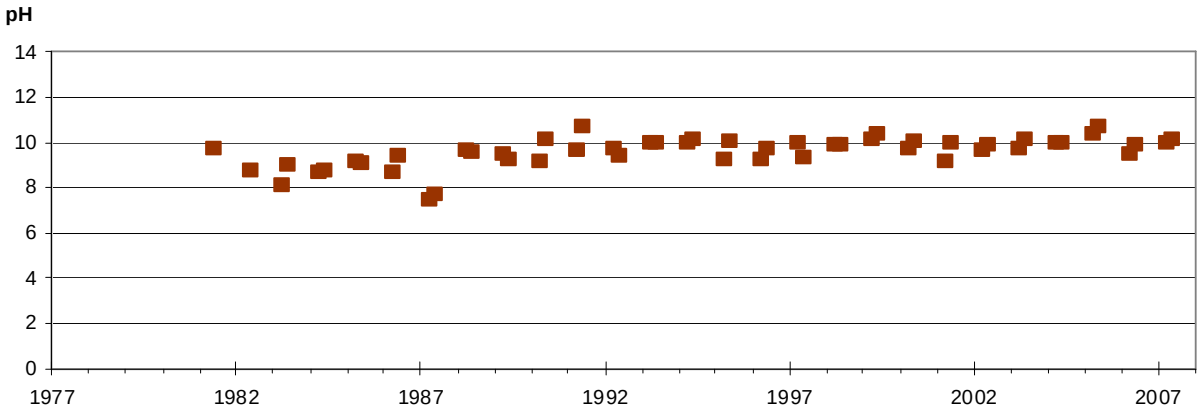
WALYORMOURING

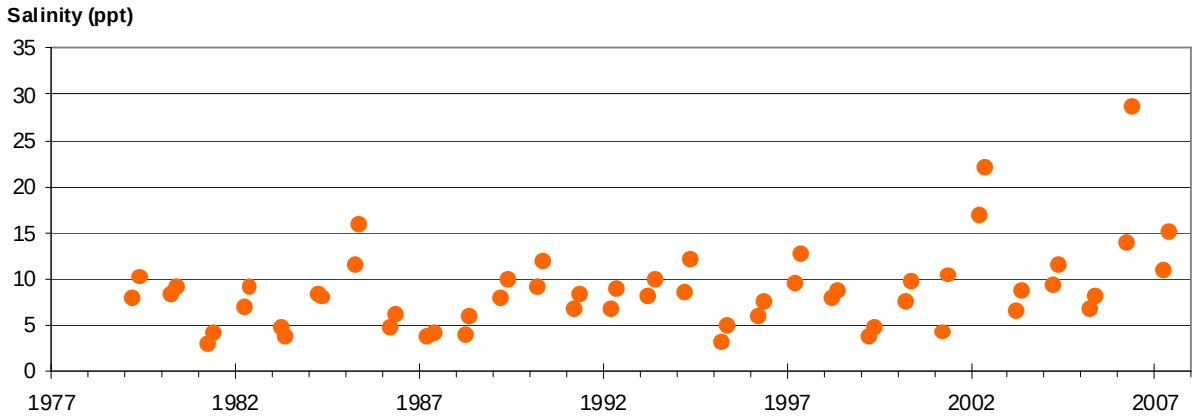


Walyormouring is in the Avon-Mortlock District (headquartered in Northam) of the Wheatbelt DEC Region.

WANNAMAL (C)







Notes:
1. Year labels are positioned at 1st July each year.
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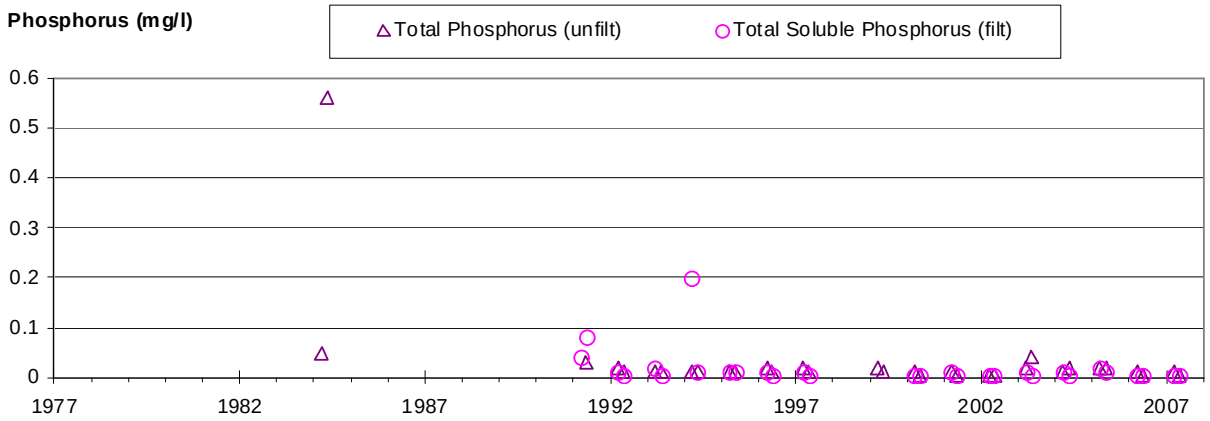
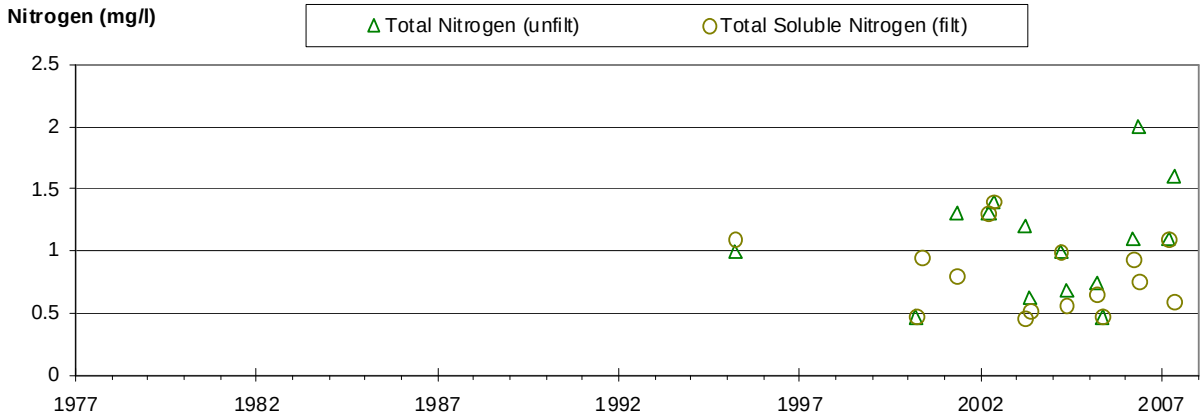
WANNAMAL

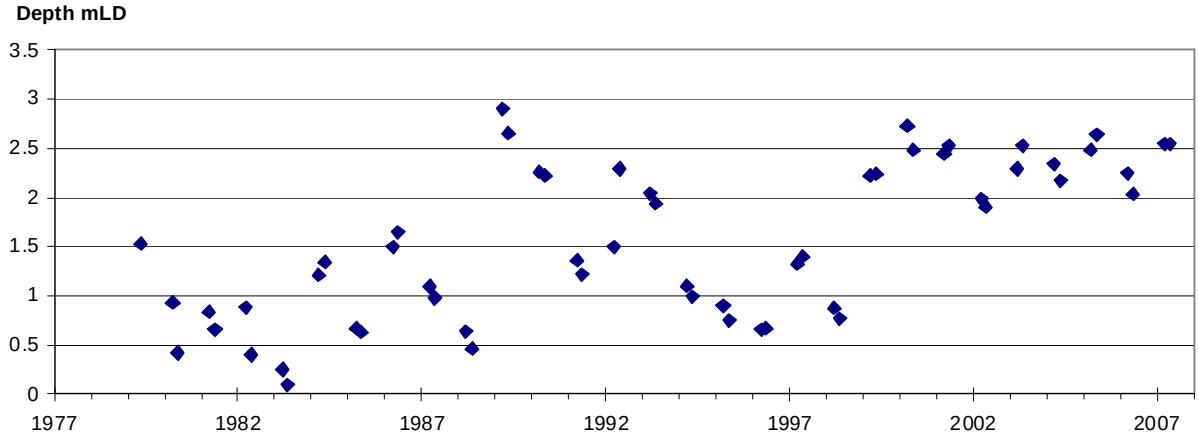


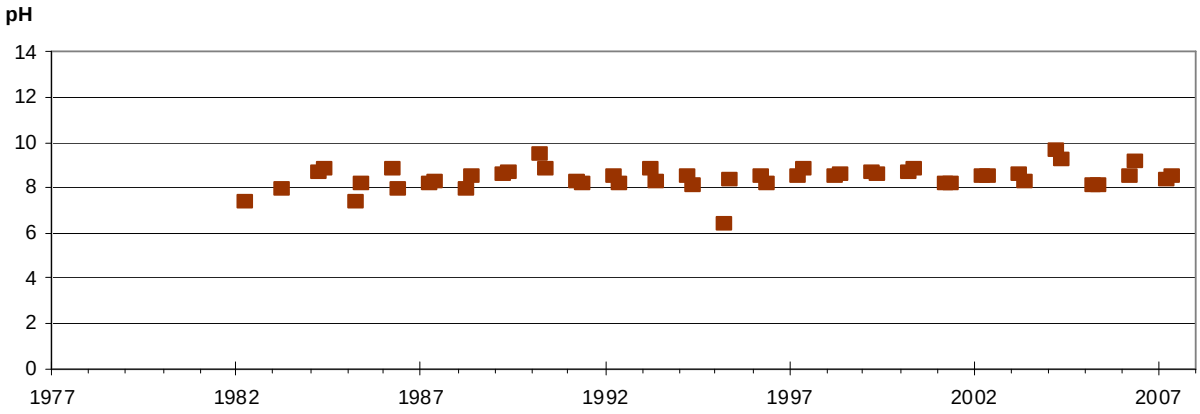


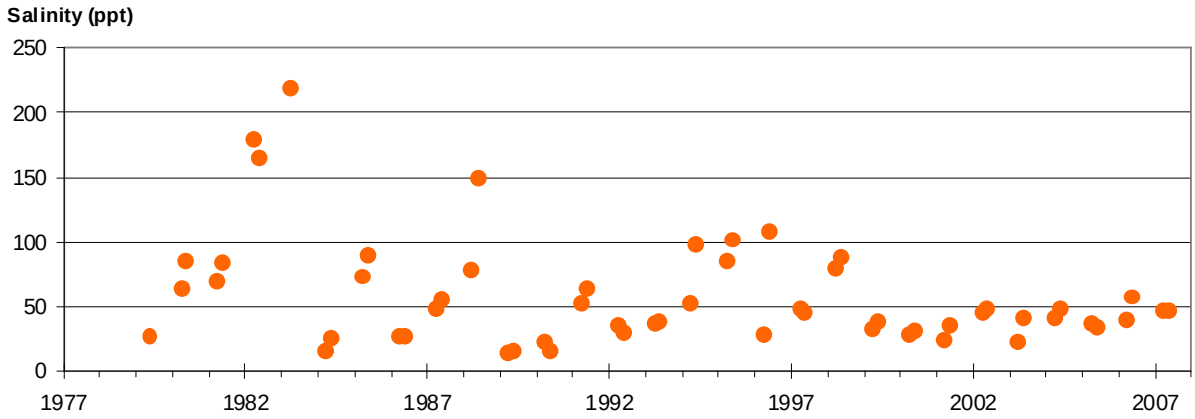
Wannamal is a component of the 'Wannamal Lakes System', which is listed in the 'Directory of Important Wetlands in Australia'.

Wannamal is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.

WARDEN (C)

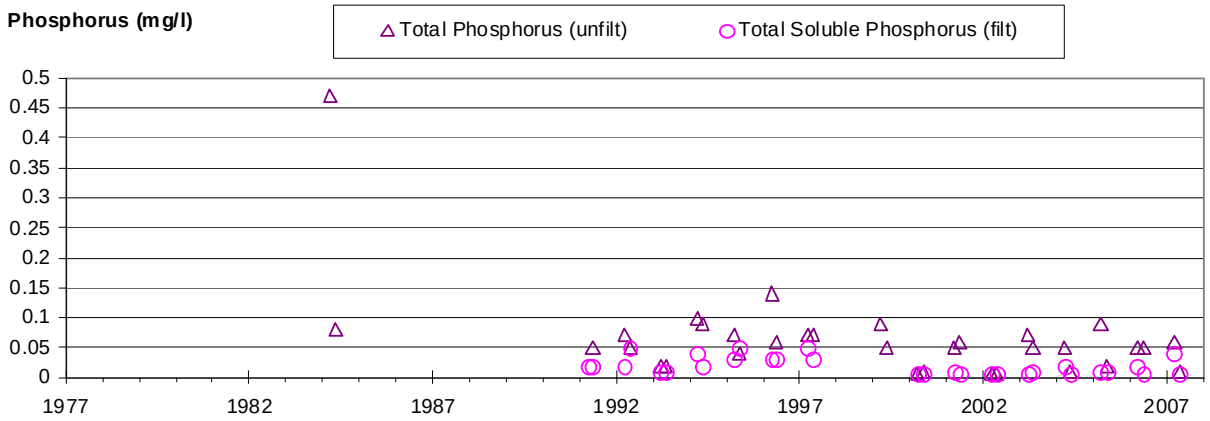


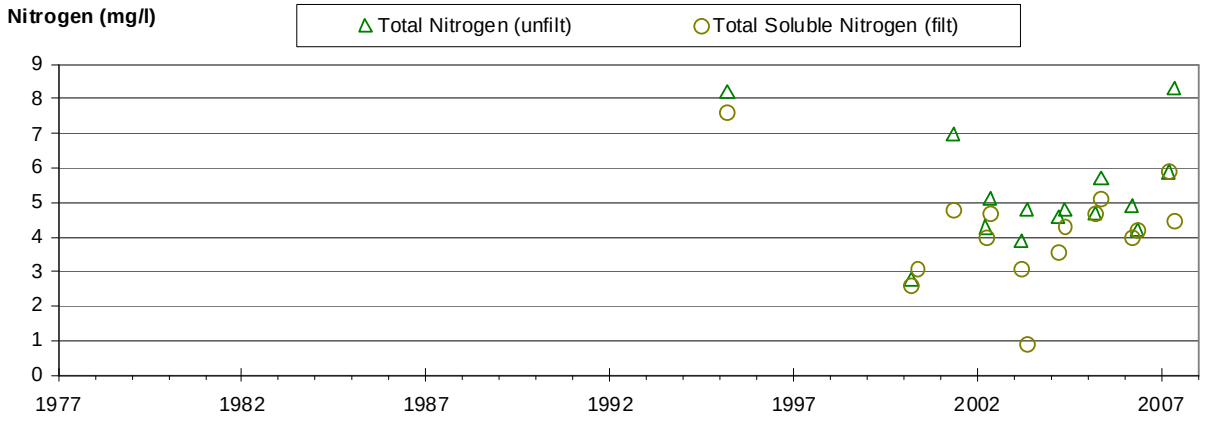




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

WARDEN





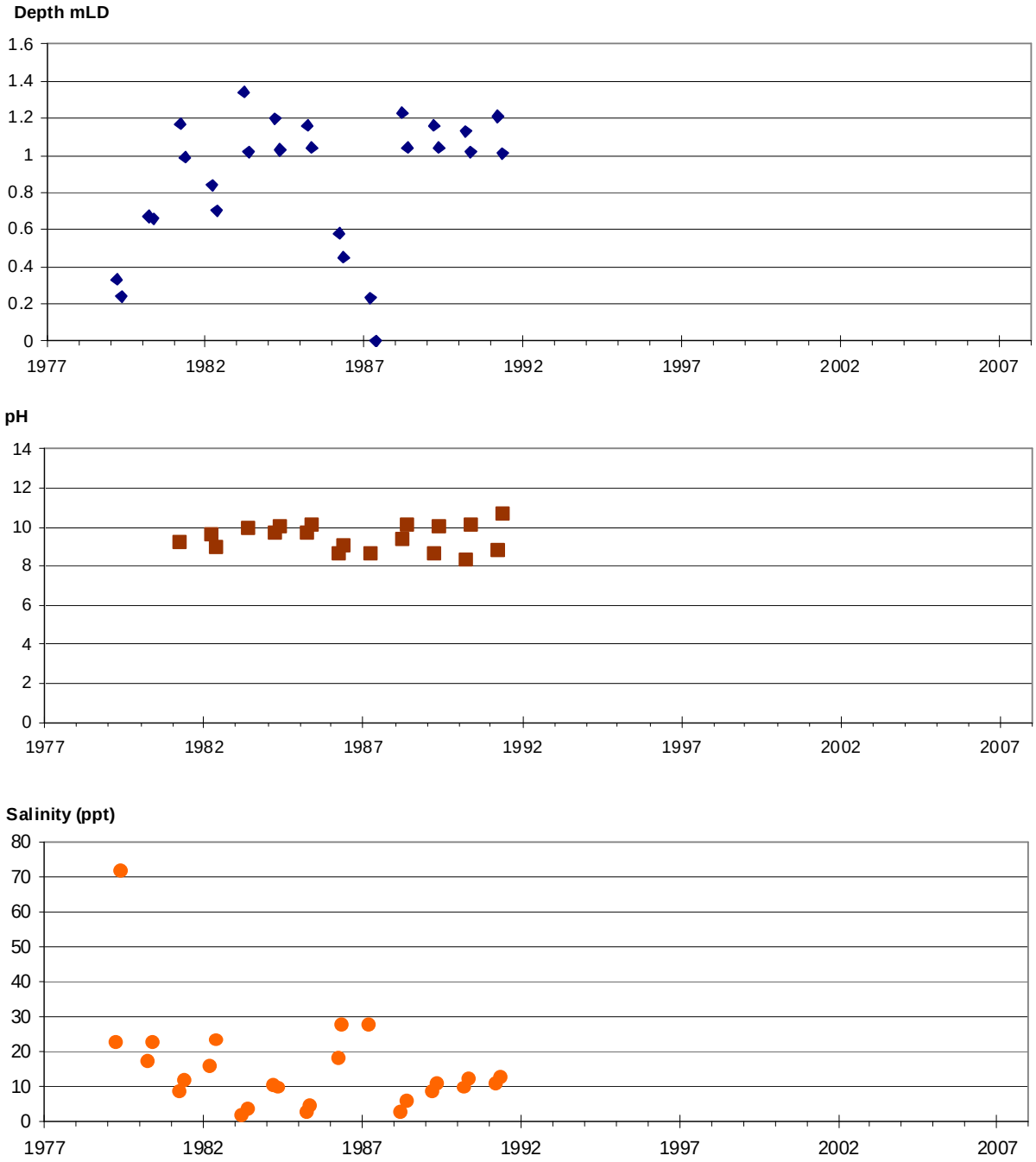
Warden is a component of the 'Lake Warden System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

Warden is also a component of the 'Lake Warden System' listed in the 'Directory of Important Wetlands in Australia'.

Warden is within the Esperance Lakes Natural Diversity Recovery Catchment.

Warden is in the Esperance District of the South Coast DEC Region.

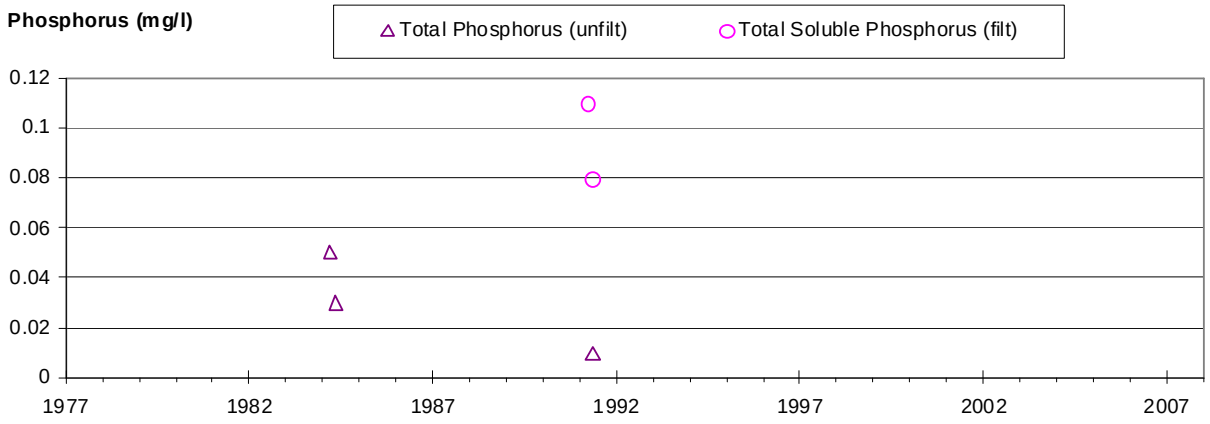
WARDERING (H)

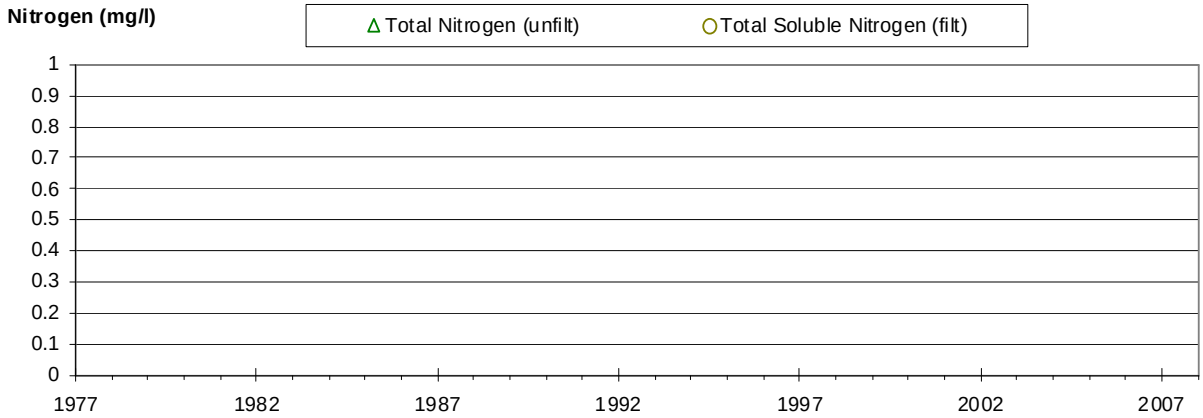


Notes:

1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

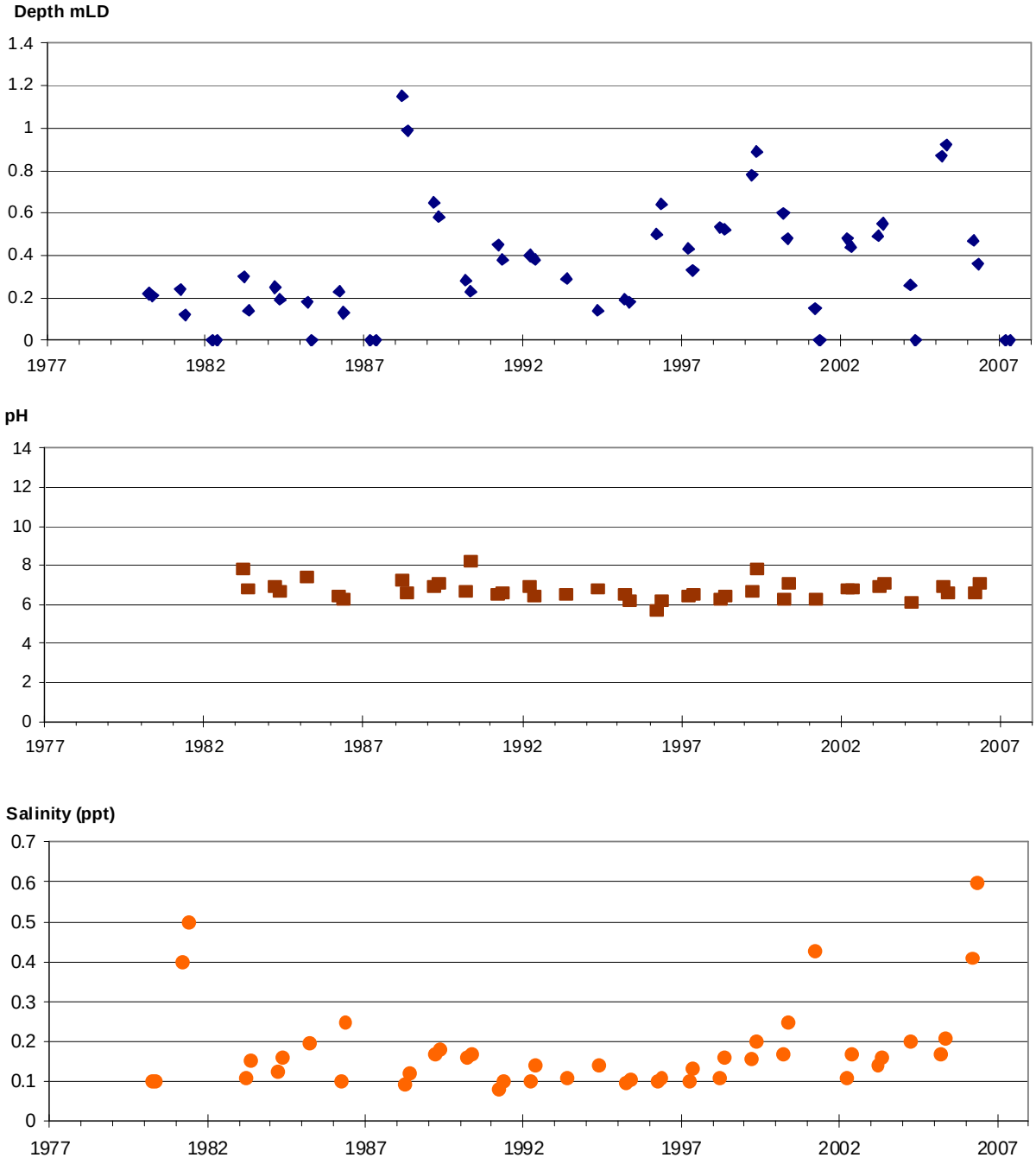
WARDERING





Wardering is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WARRINUP (C)



Notes:
1. Year labels are positioned at 1st July each year.
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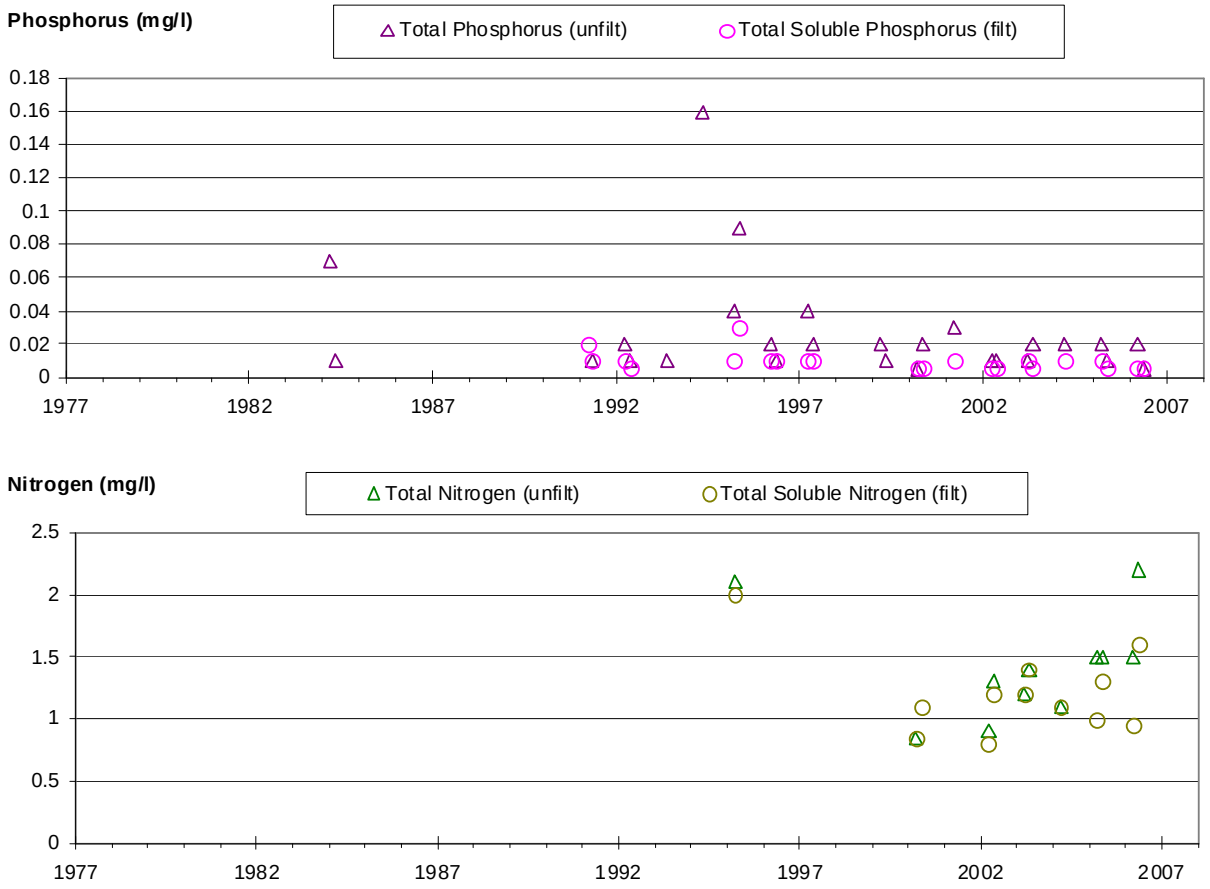
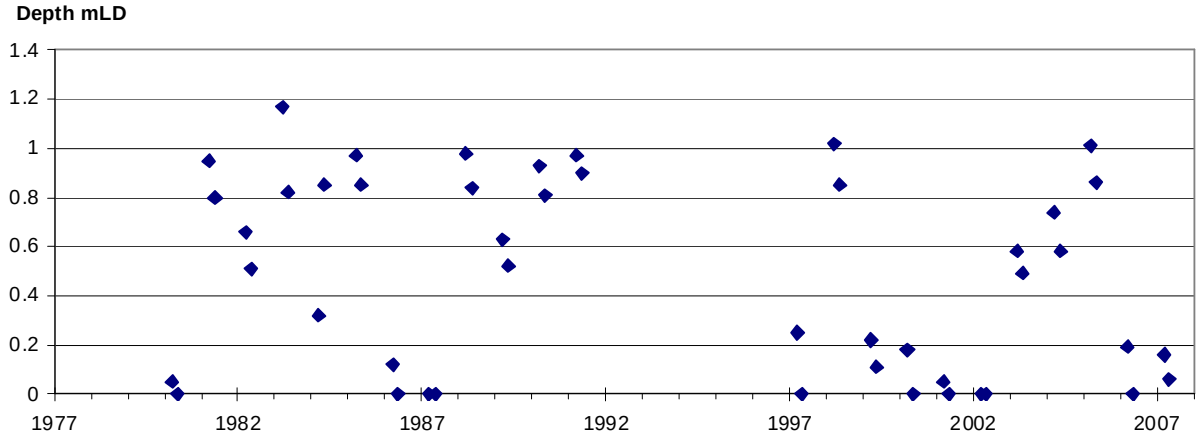
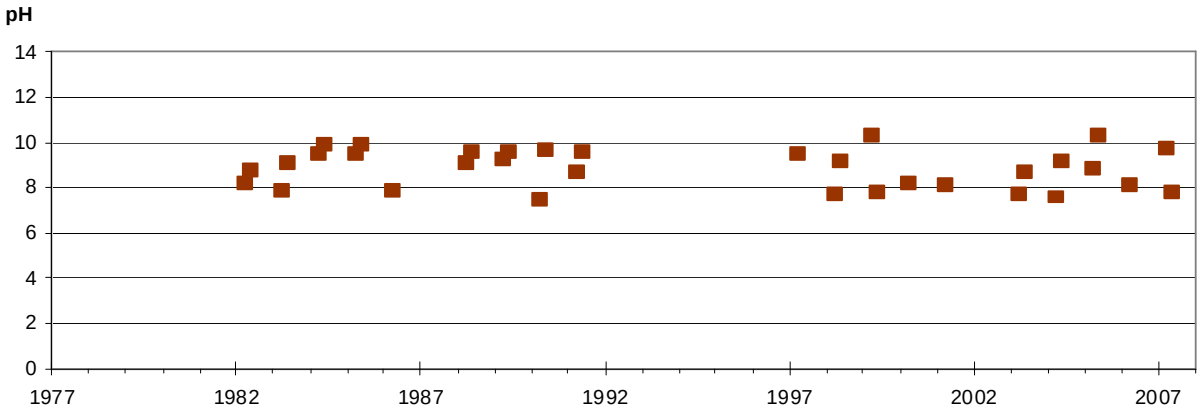
WARRINUP

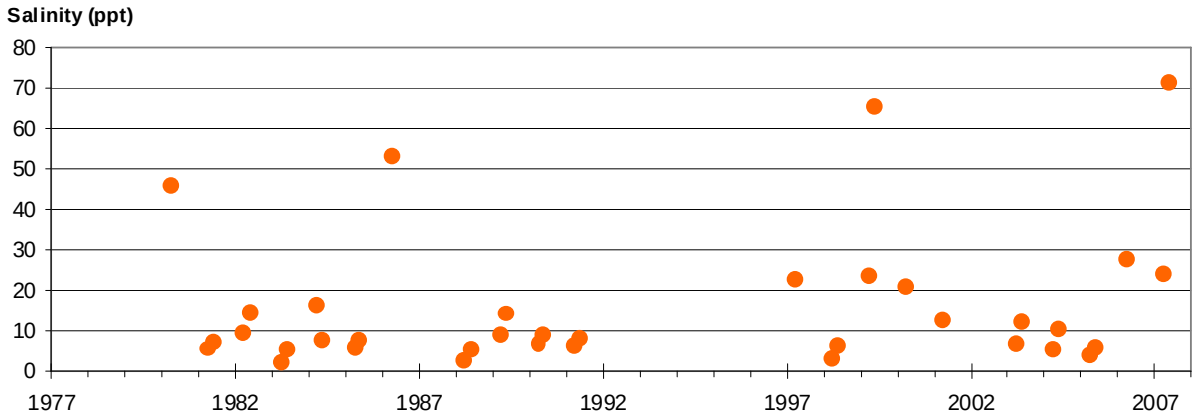


Warrinup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WEST ARTHUR 5456 (C)

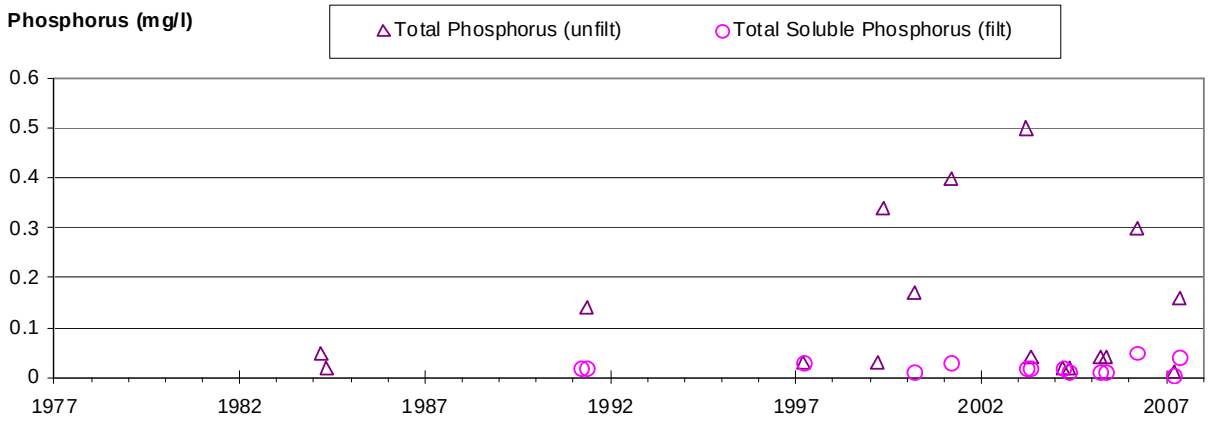


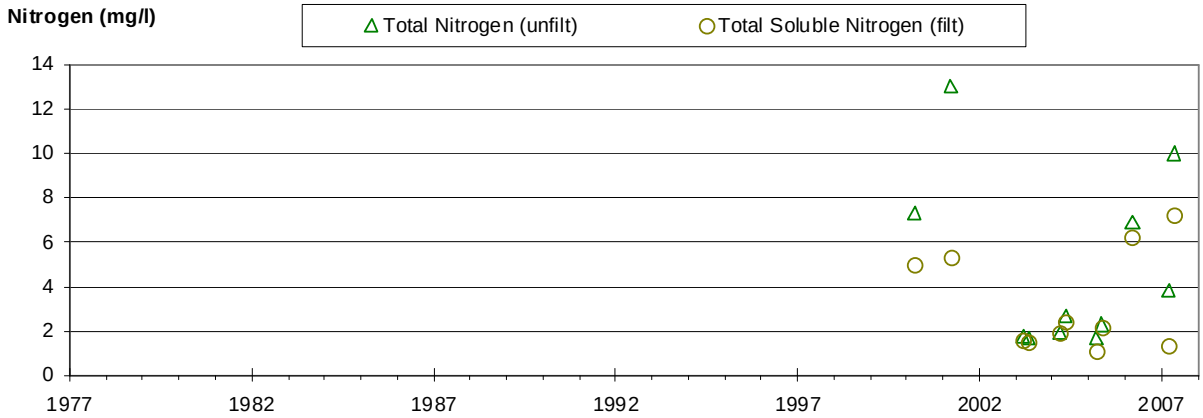




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

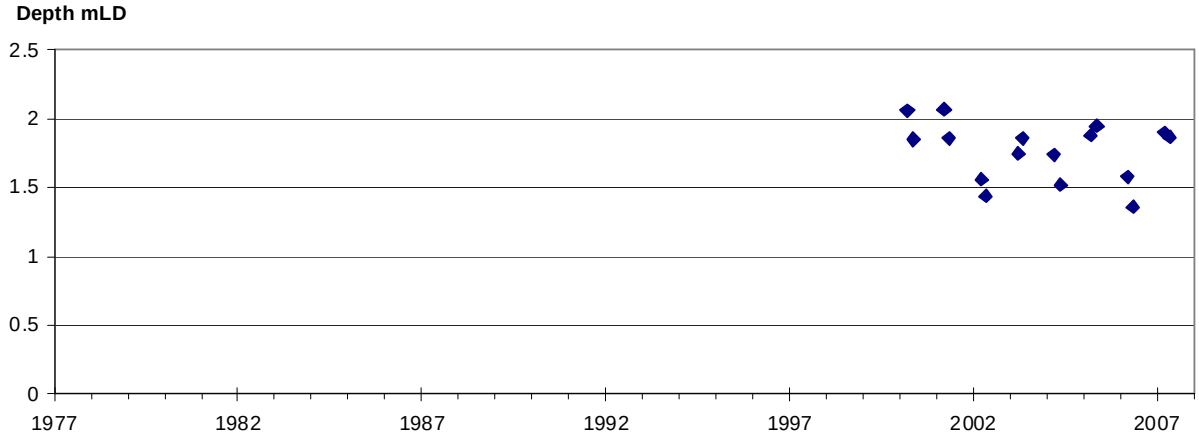
WEST ARTHUR 5456

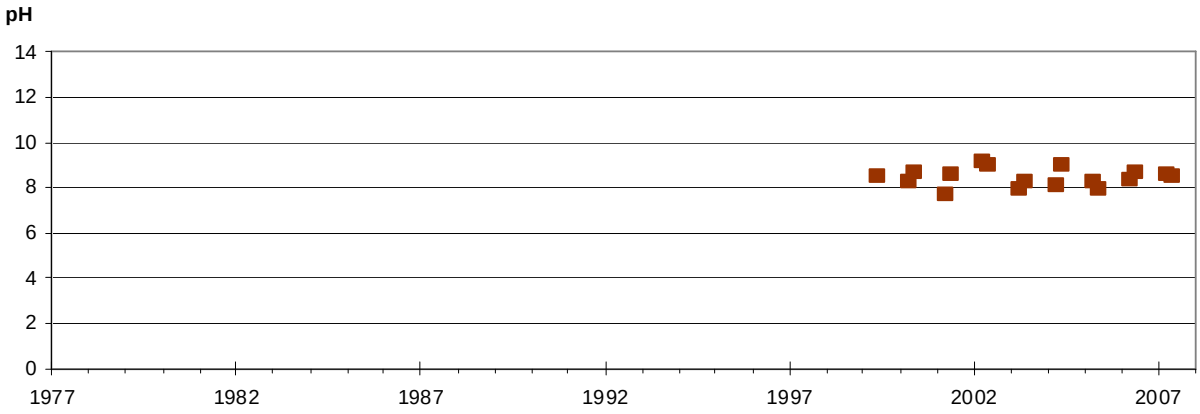


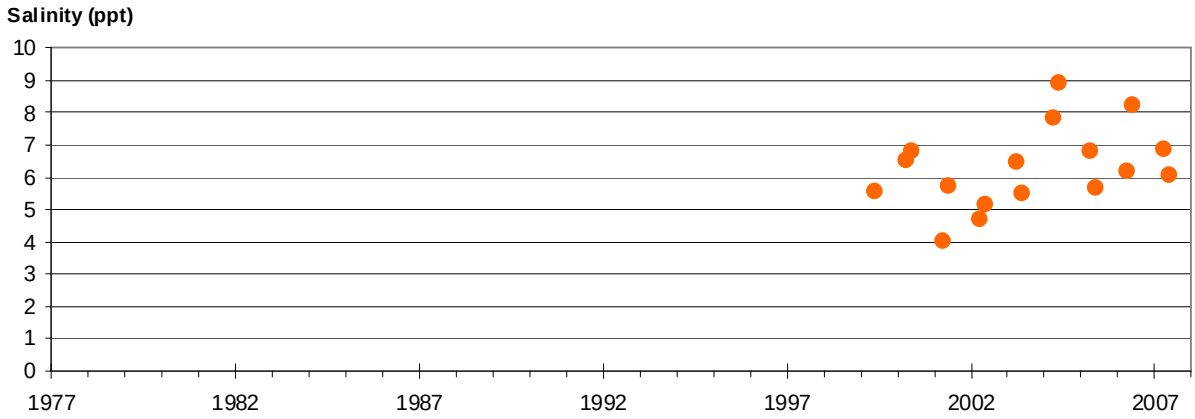


West Arthur 5456 is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WHEATFIELD (C, IM)

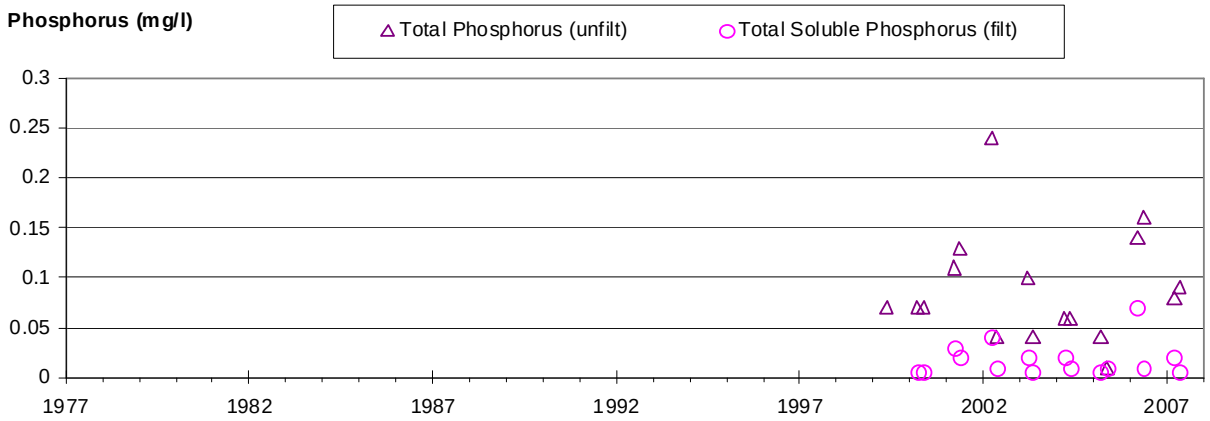


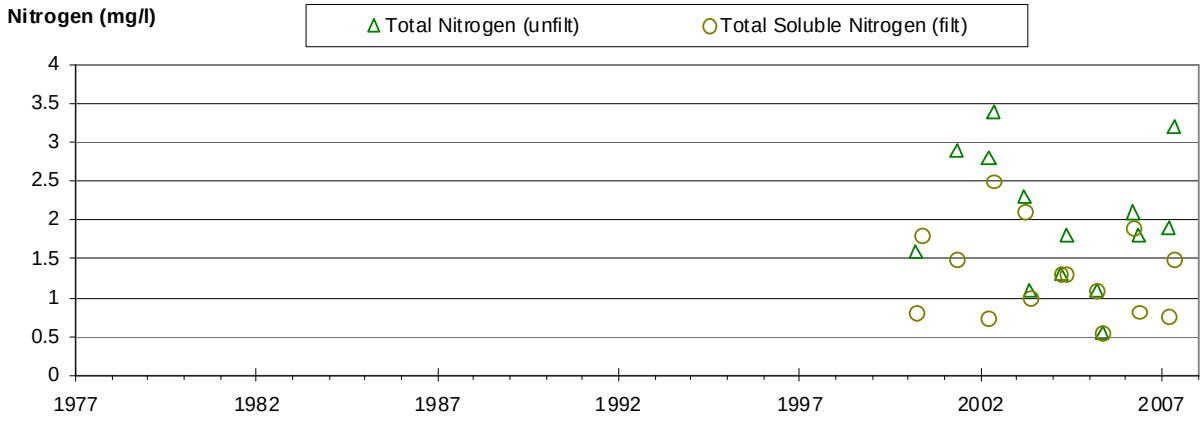




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

WHEATFIELD





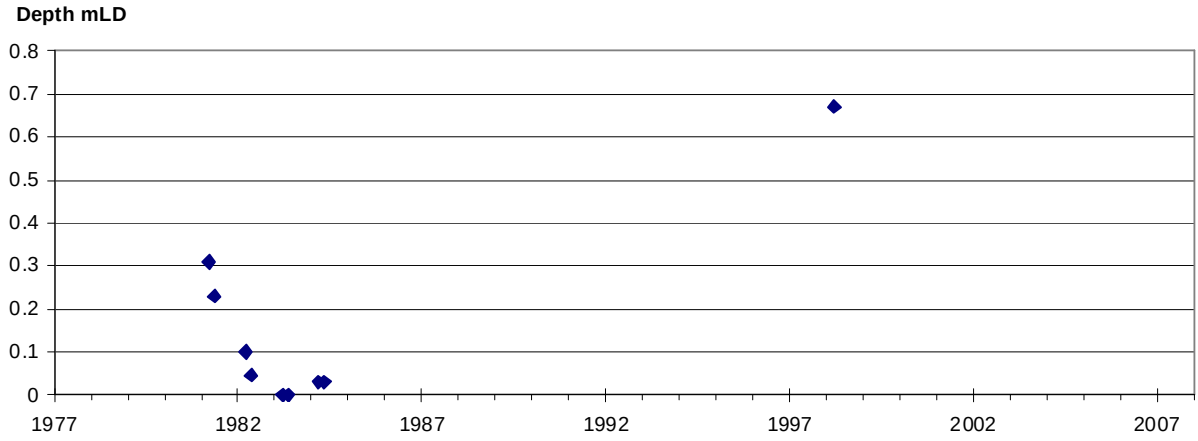
Wheatfield is a component of the 'Lake Warden System', which is listed as a Wetland of International Importance under the 'Ramsar' Convention on Wetlands.

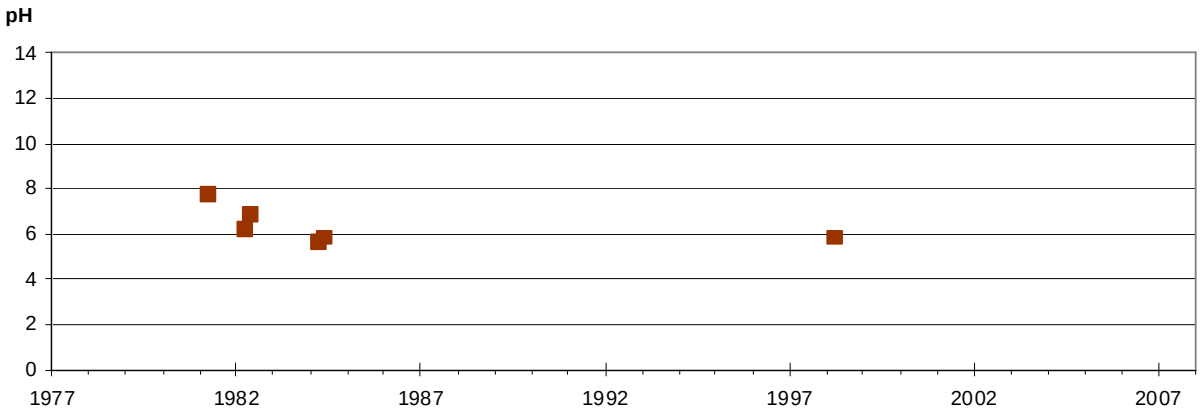
Wheatfield is also a component of the 'Lake Warden System' listed in the 'Directory of Important Wetlands in Australia'.

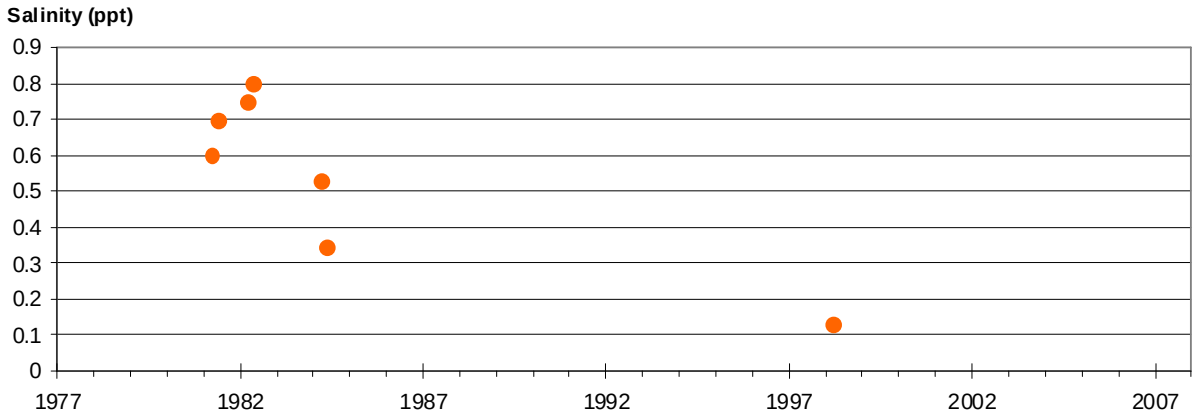
Wheatfield is within the Esperance Lakes Natural Diversity Recovery Catchment.

Wheatfield is in the Esperance District of the South Coast DEC Region.

WHITE (ALBANY) (H)

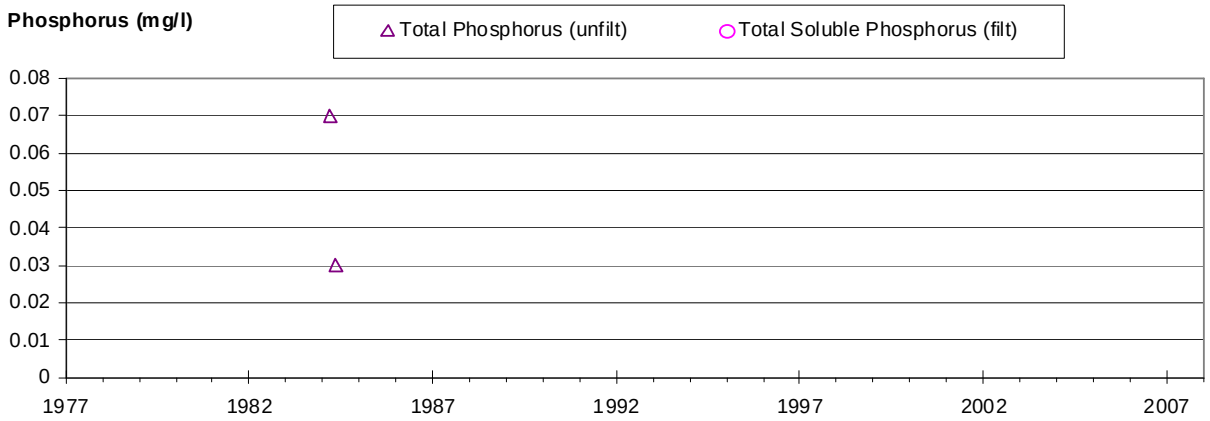


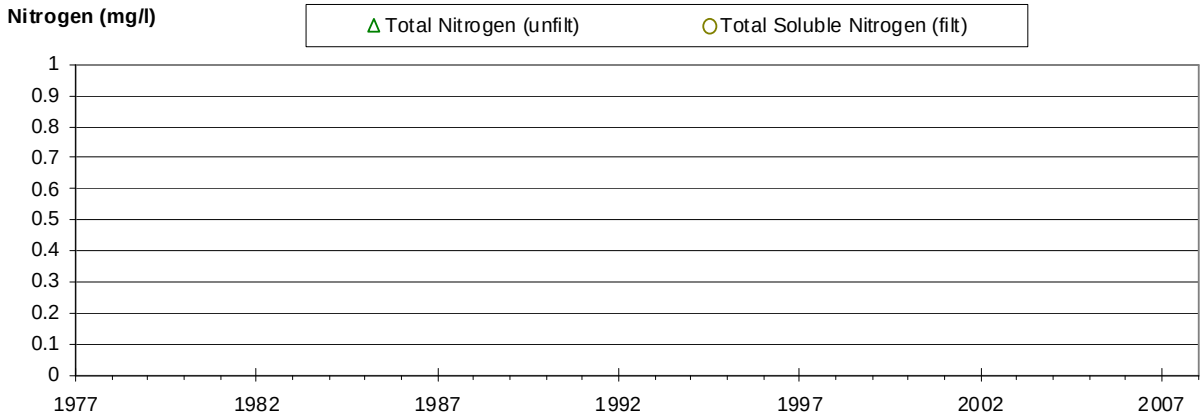




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

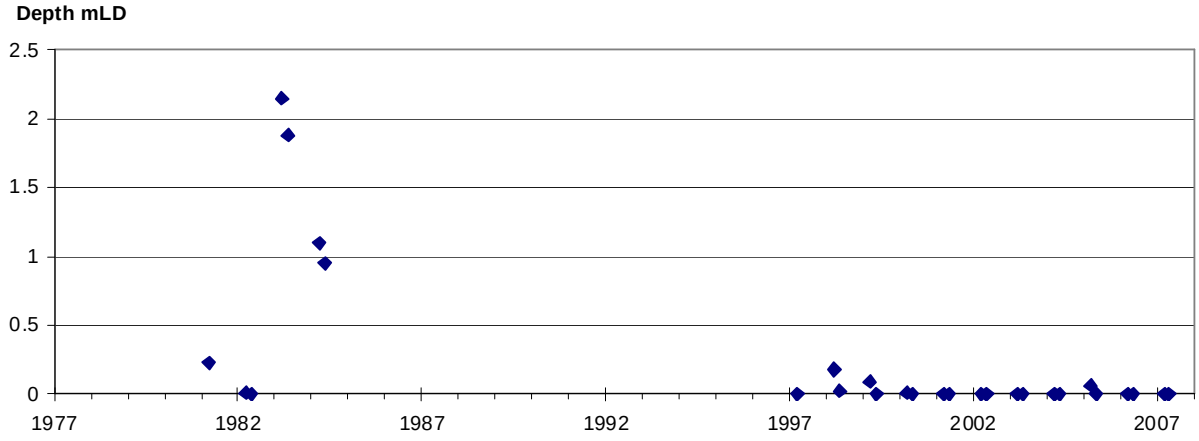
WHITE (ALBANY)

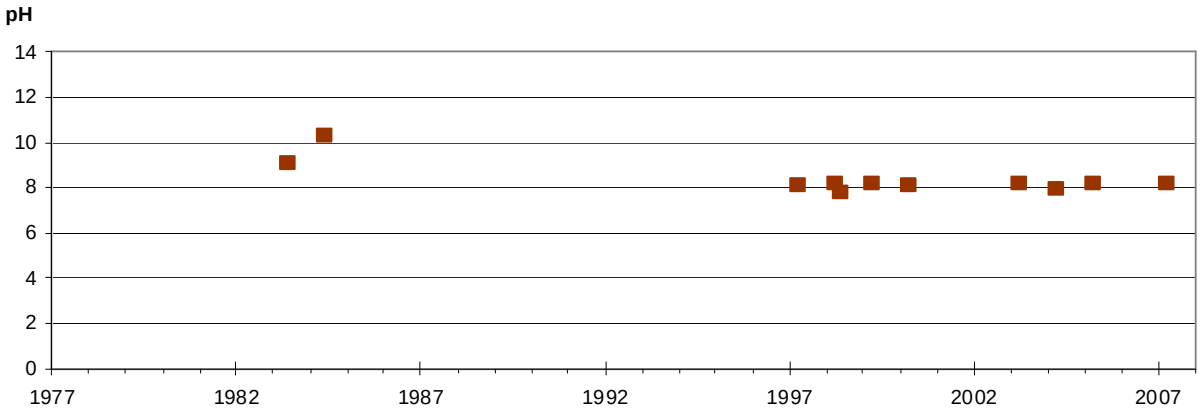


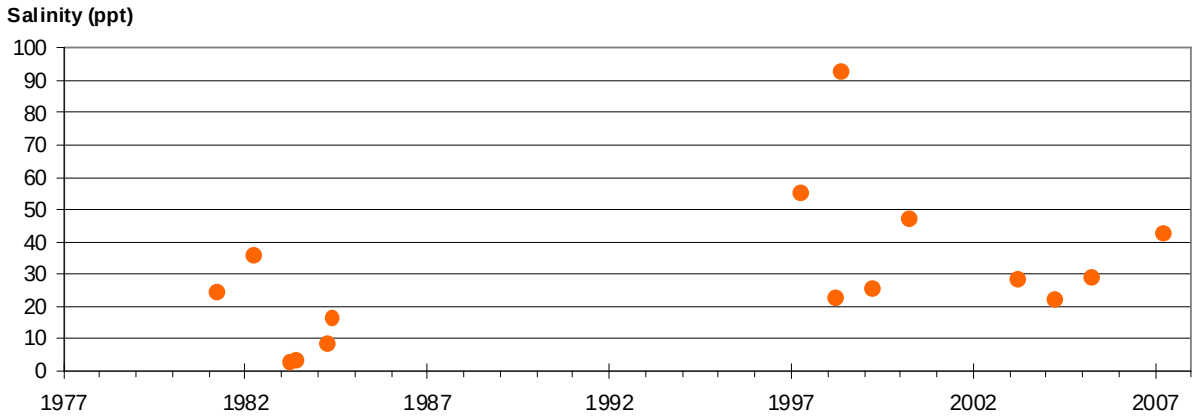


White (Albany) is in the Albany District of the South Coast DEC Region

WHITE (NARROGIN) (C)

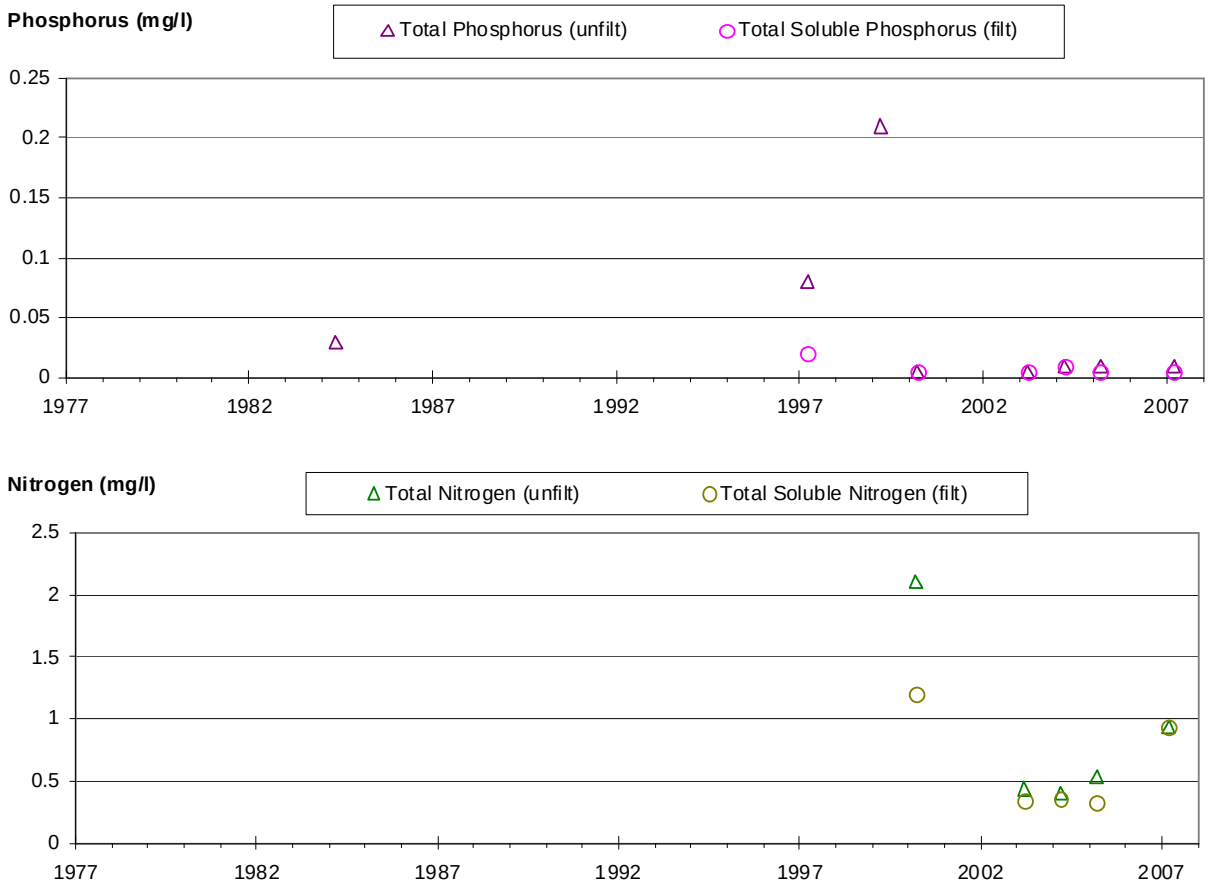






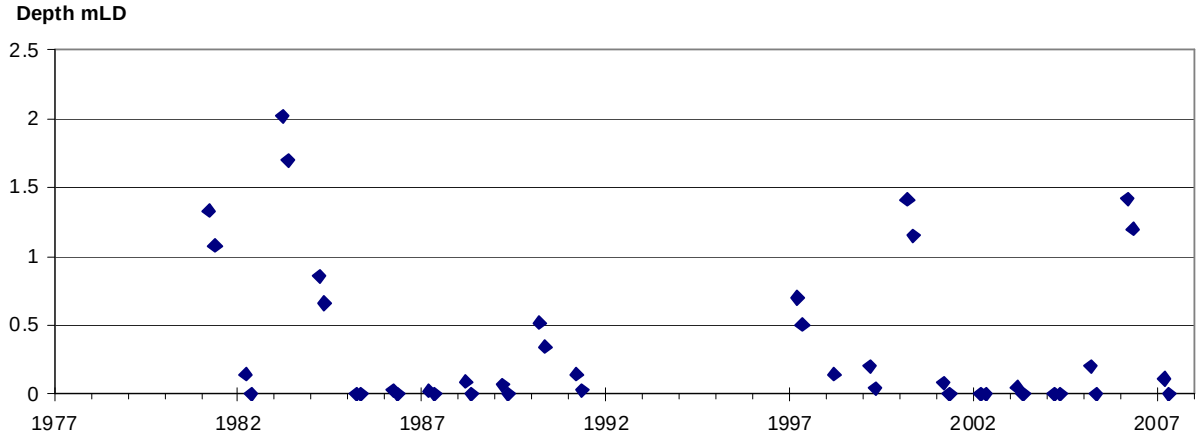
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

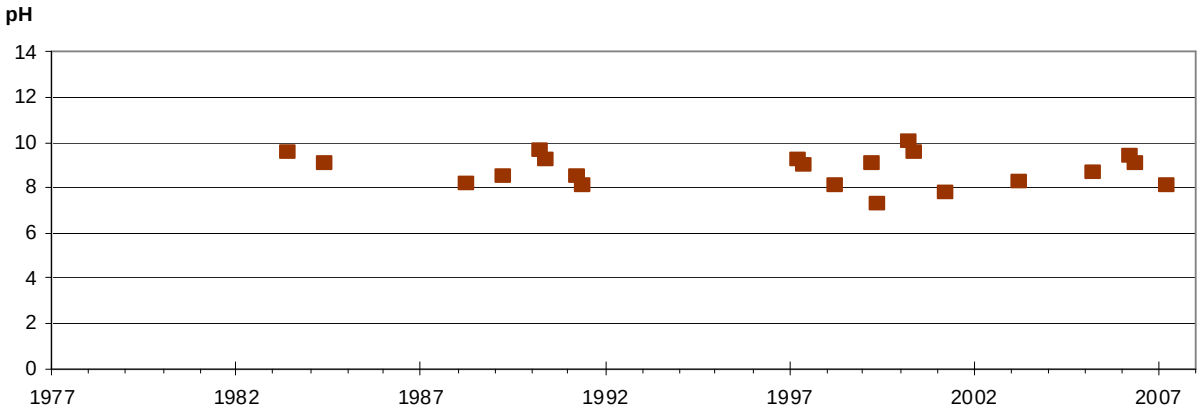
WHITE (NARROGIN)

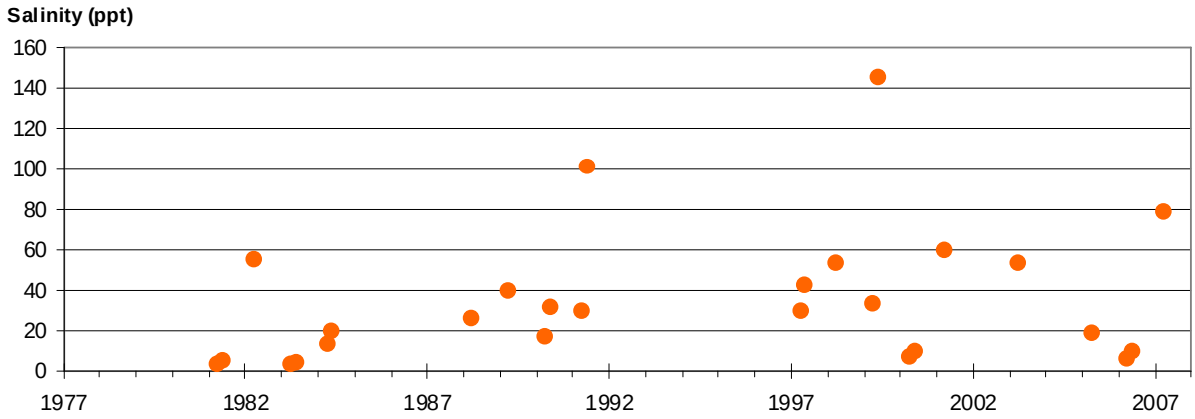


White (Narrogin) is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WHITE WATER (C)

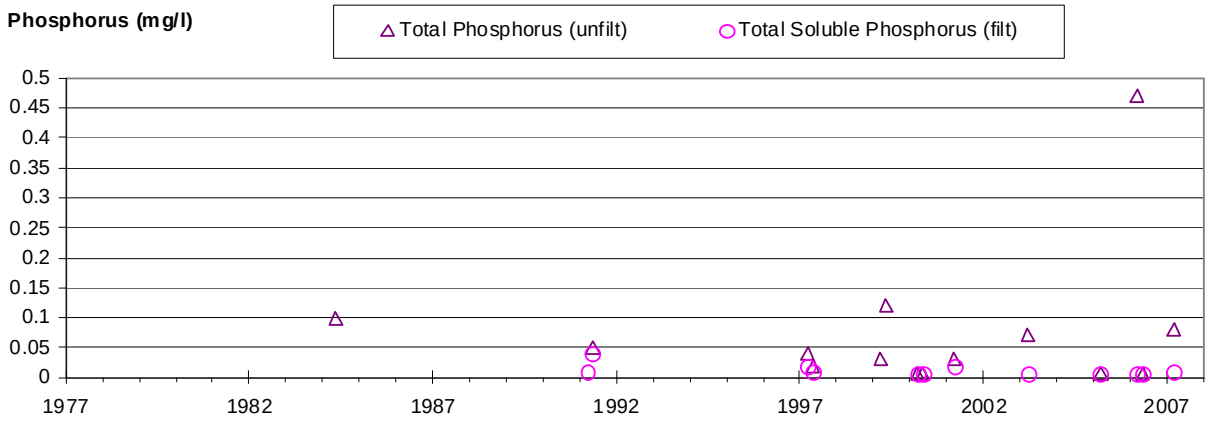


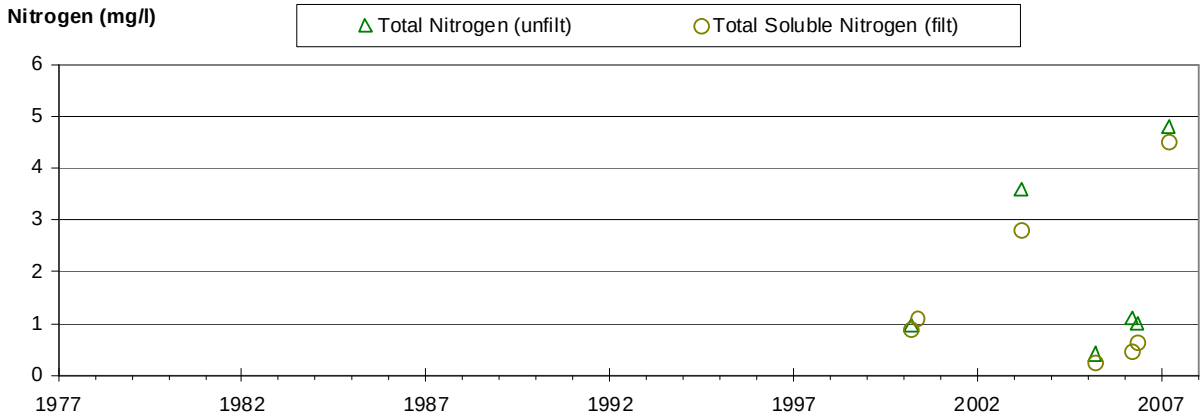




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

WHITE WATER

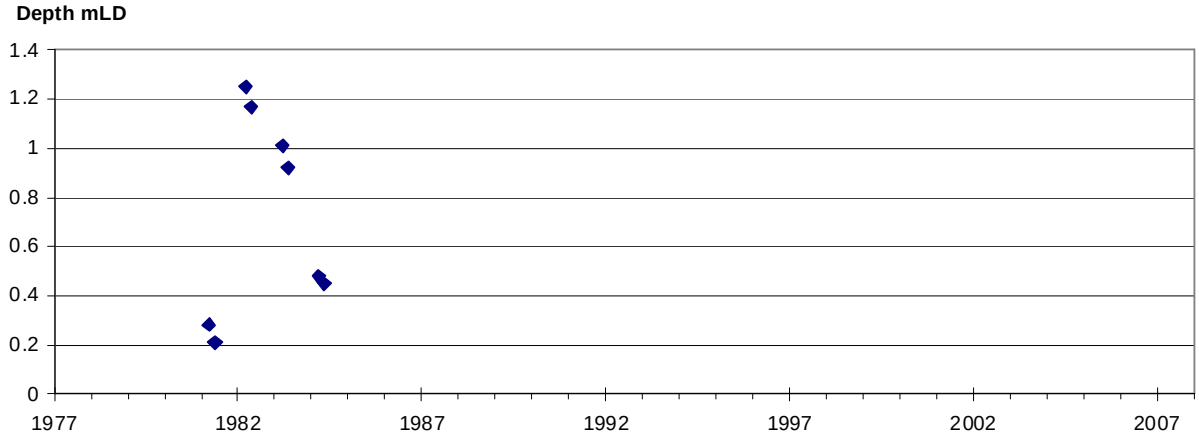


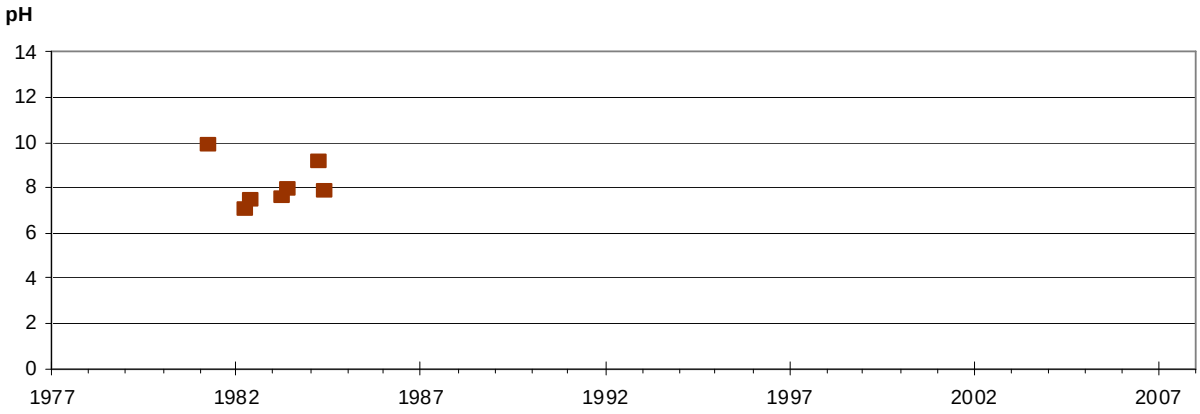


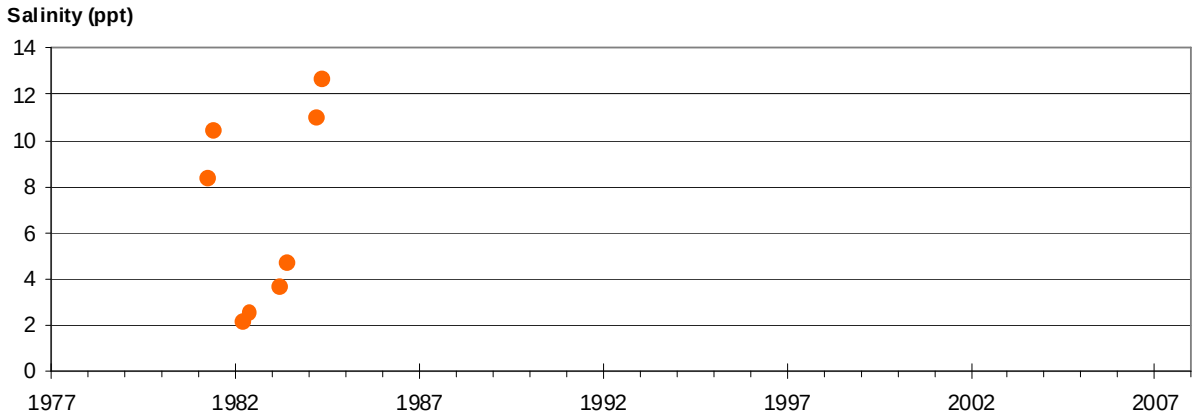
White Water is a component of the 'Yealering Lakes System', which is listed in the 'Directory of Important Wetlands in Australia'.

White Water is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

WILD HORSE (H)







Notes:
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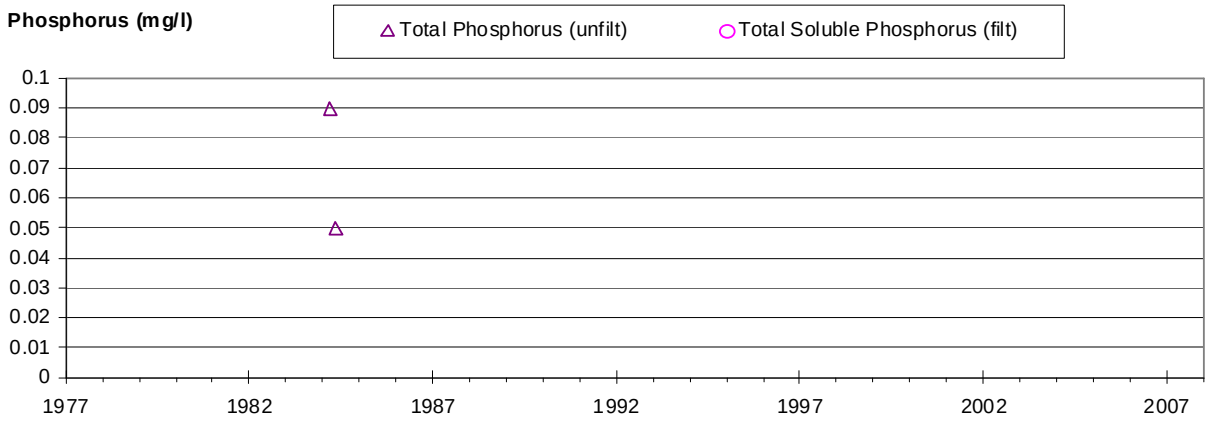
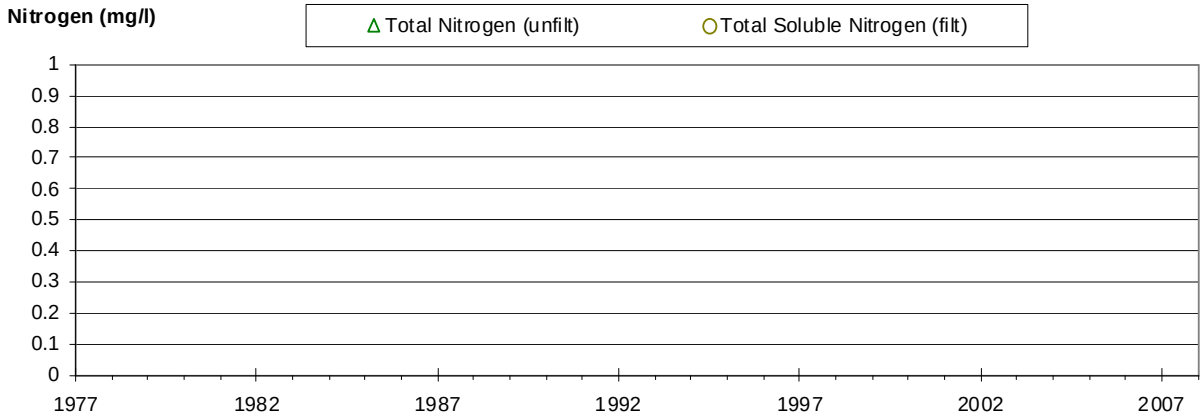
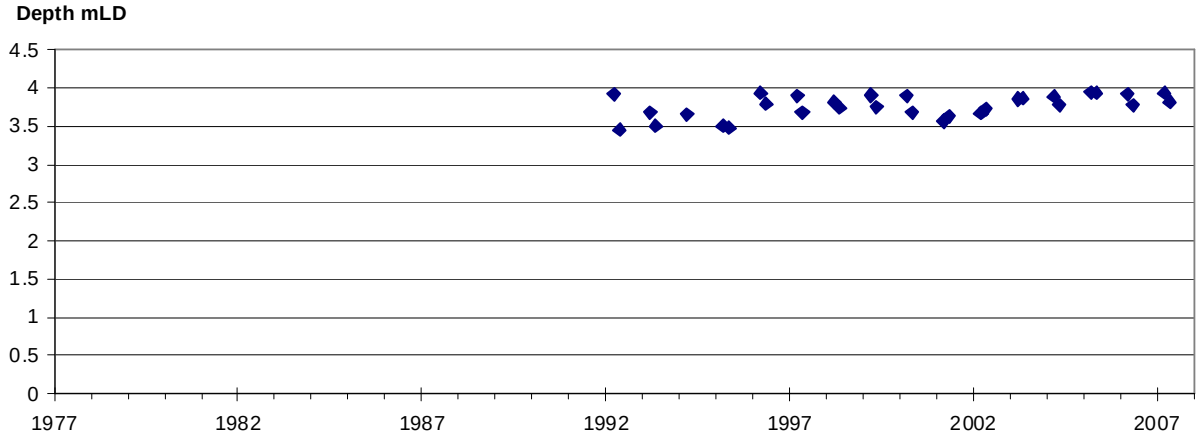
WILD HORSE

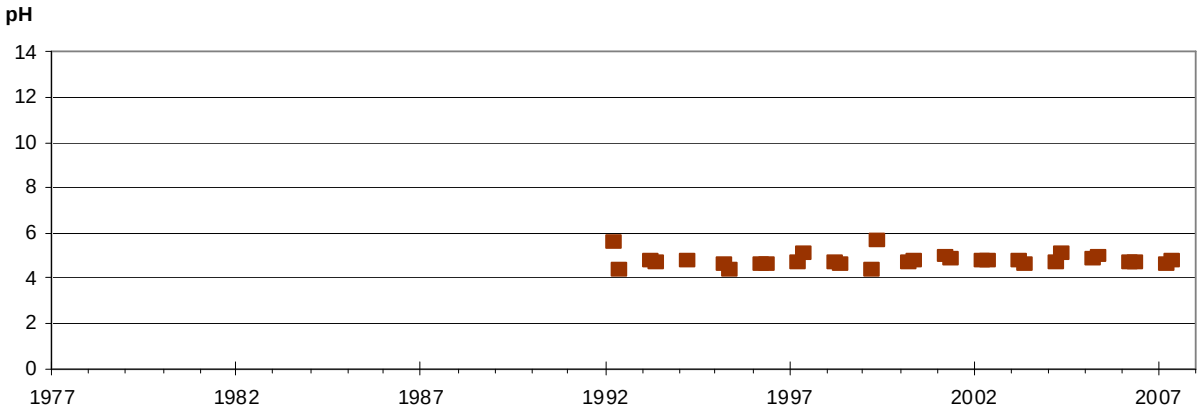


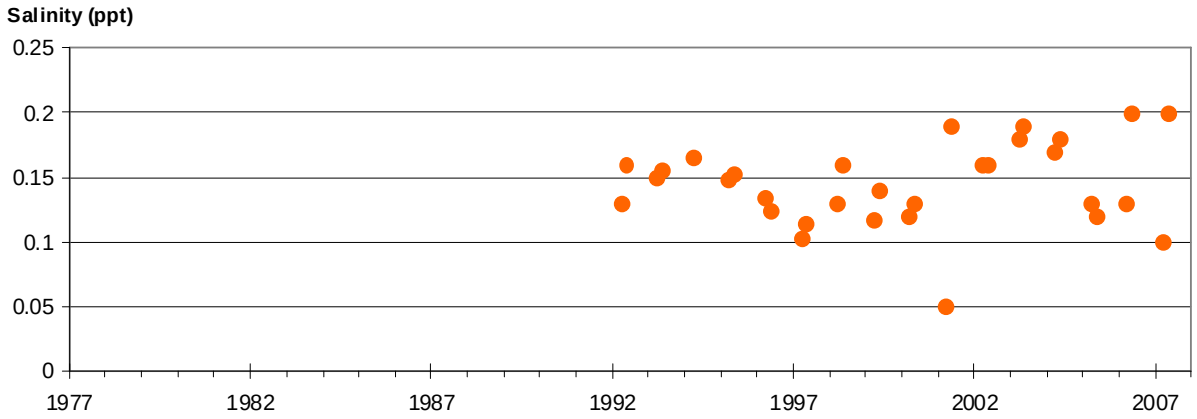


Wild Horse is in the Wellington District (headquartered in Collie) of the South West DEC Region.

WILSON (C)

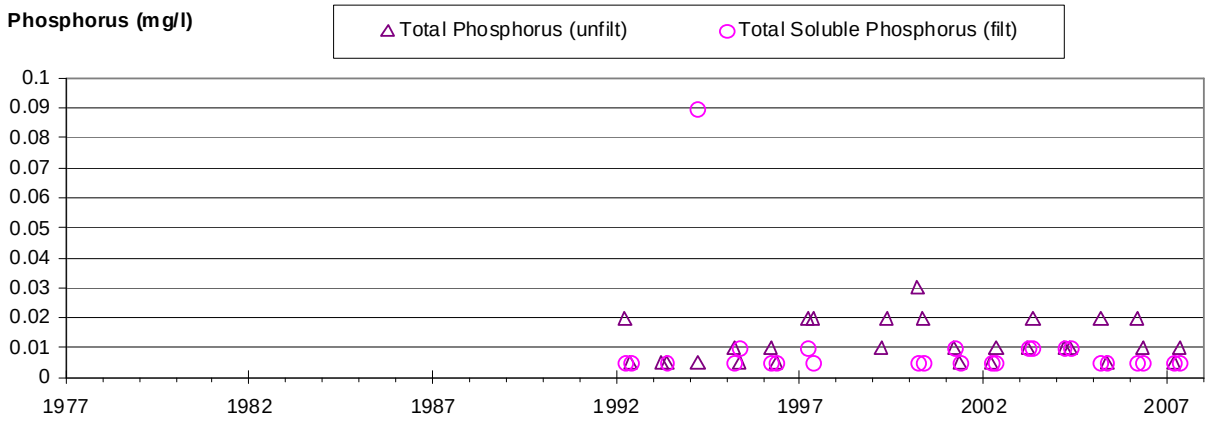


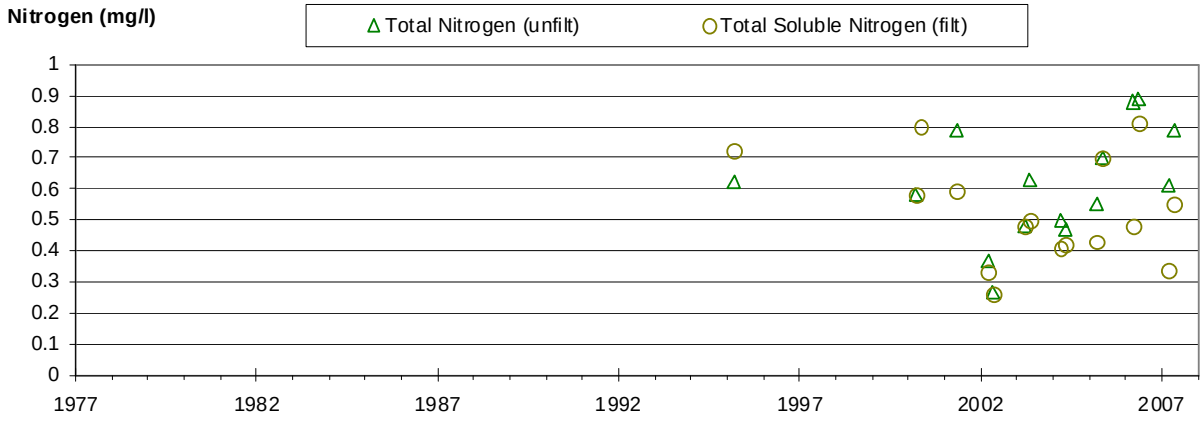




Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

WILSON

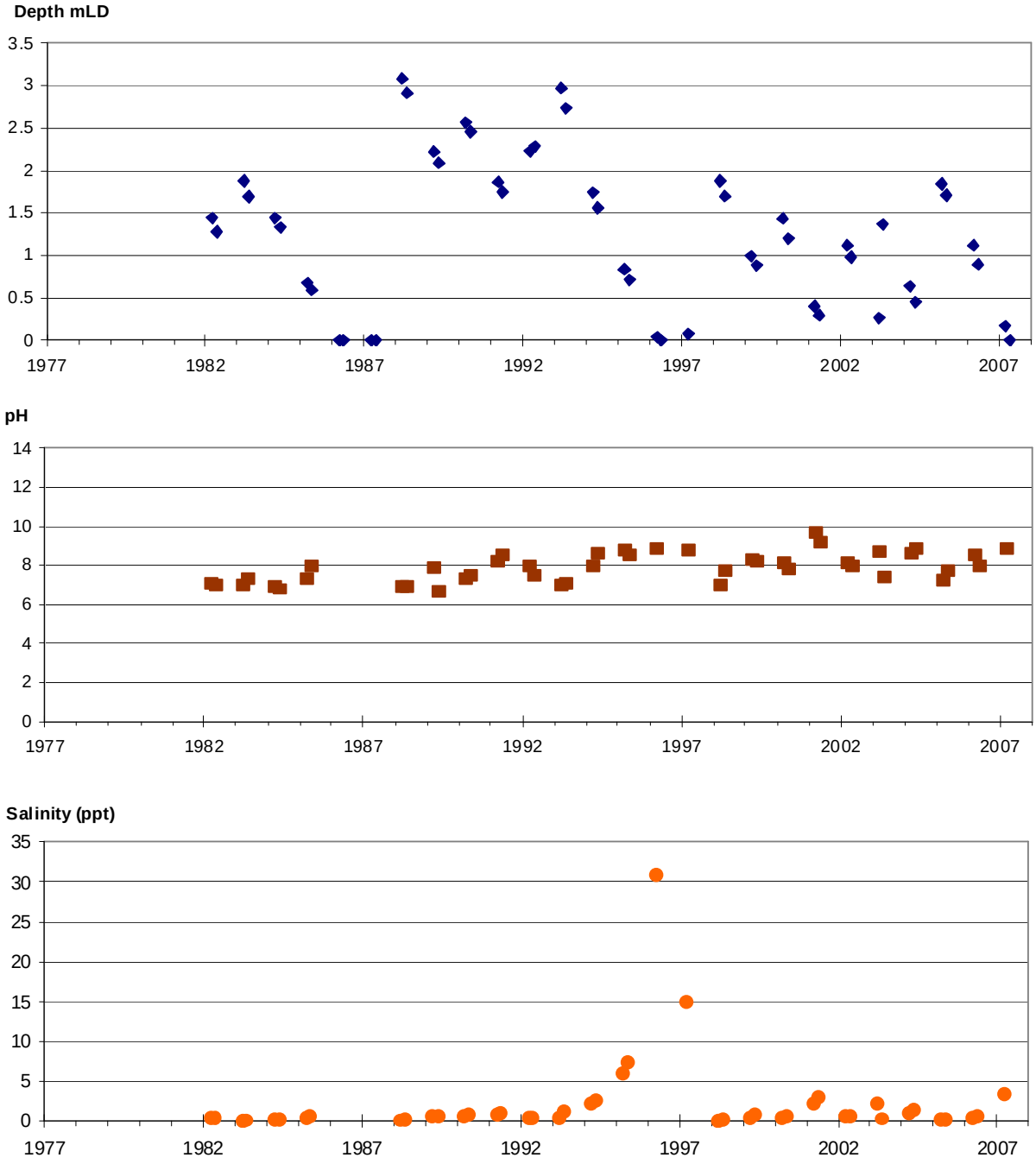




Wilson is a component of the 'Gingilup-Jasper Wetland System', which is listed in the 'Directory of Important Wetlands in Australia'.

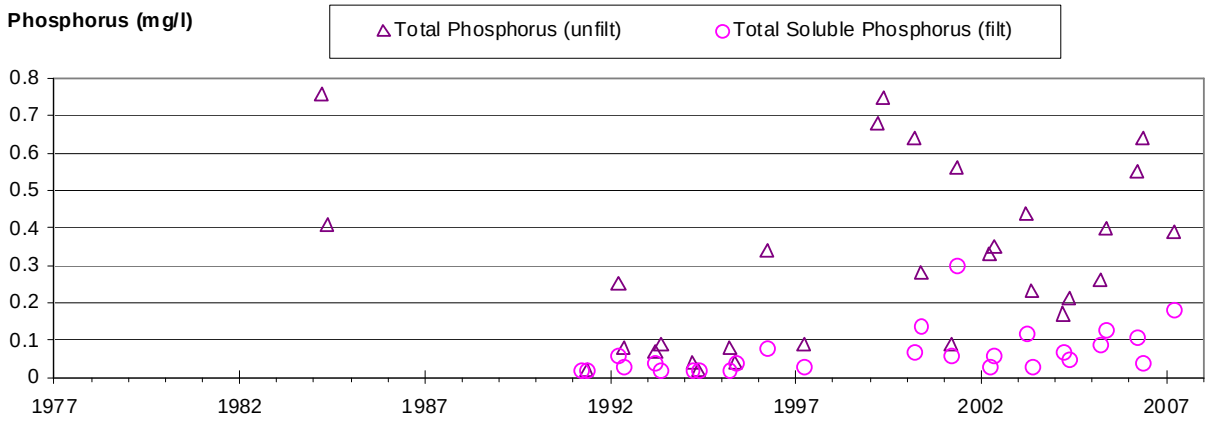
Wilson is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

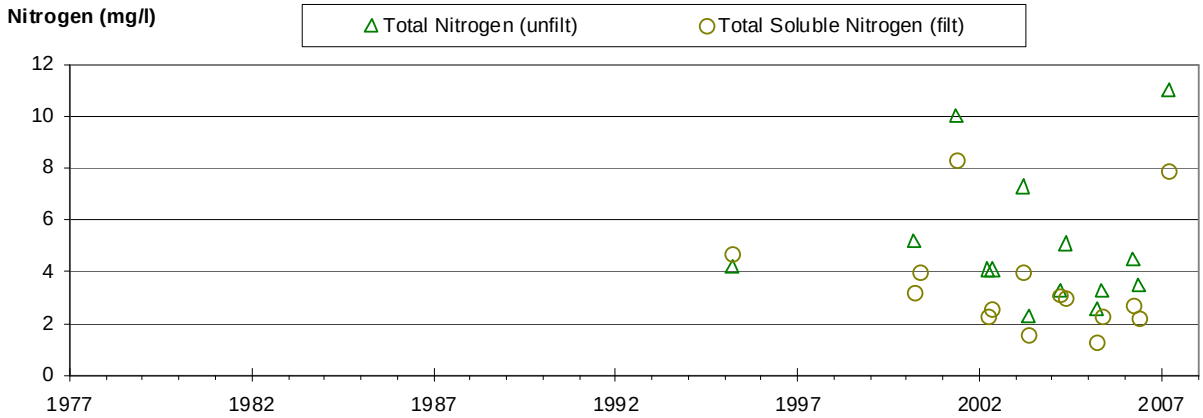
YAALUP (C, IM)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

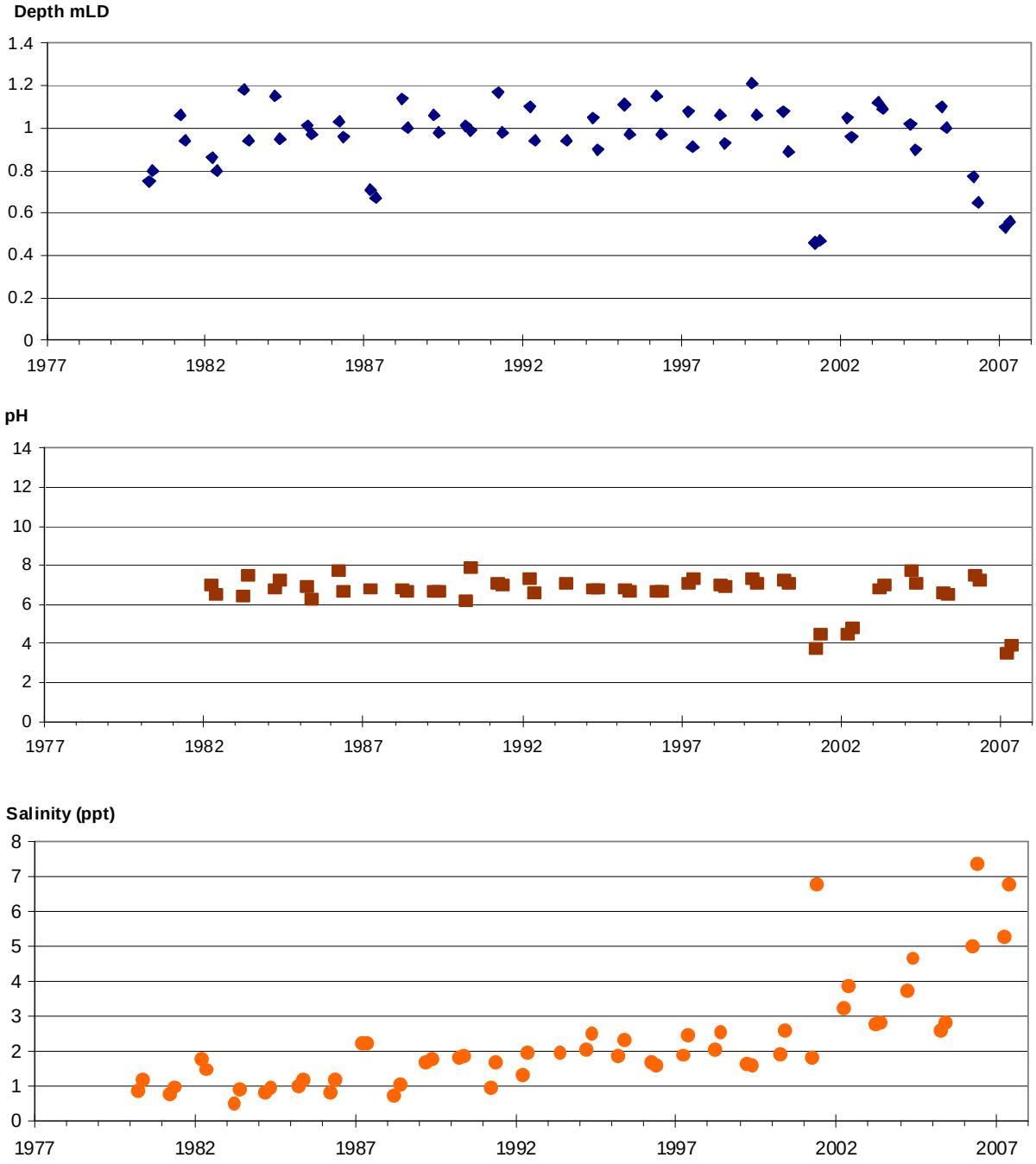
YAALUP





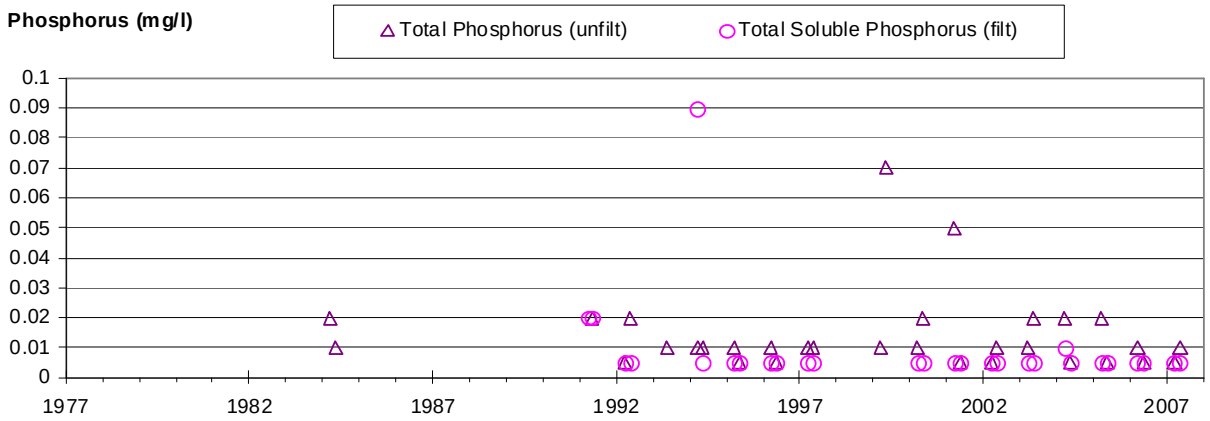
Yaalup is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

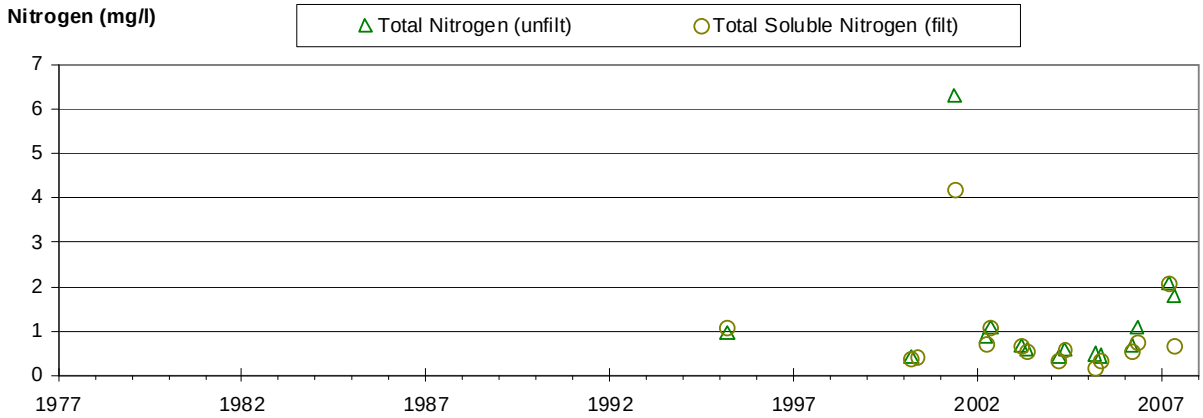
YARNUP (C)



Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

YARNUP



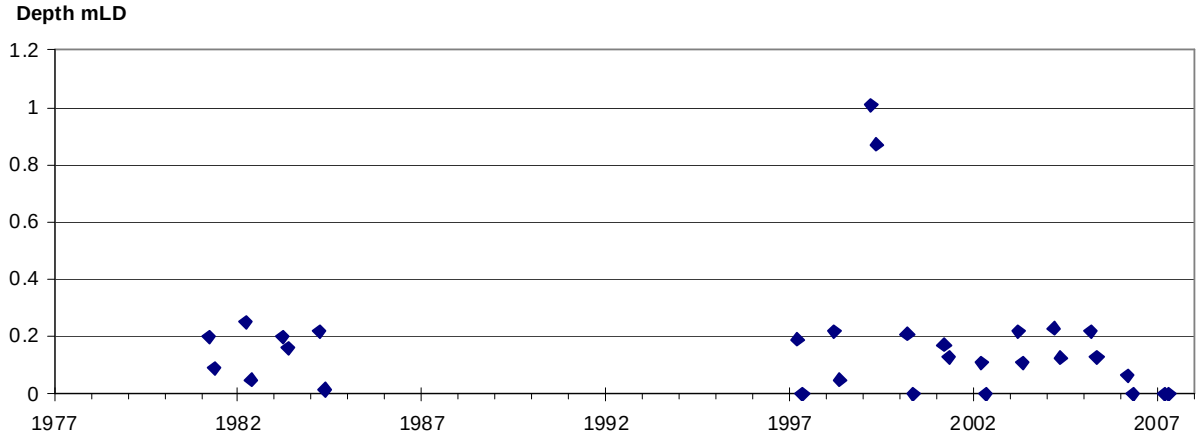


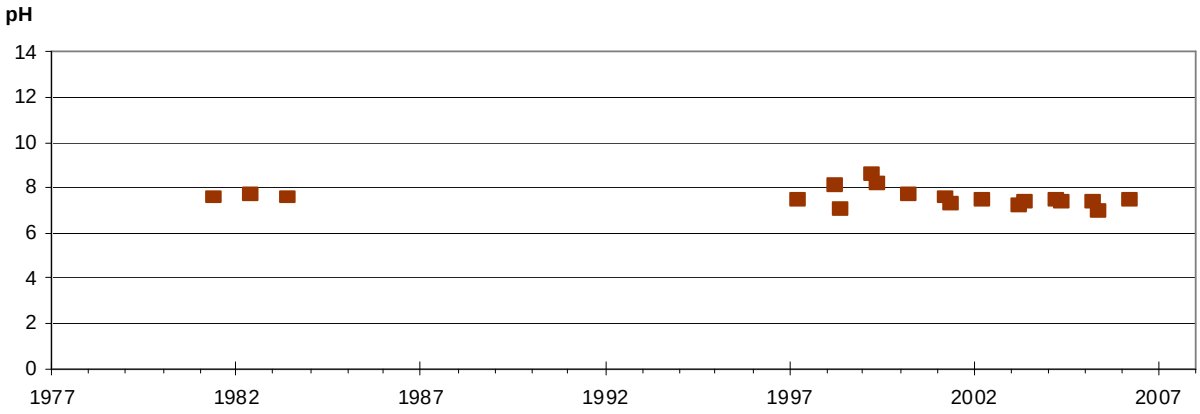
Yarnup is a component of the 'Byenup Lagoon System', which is listed in the 'Directory of Important Wetlands in Australia'.

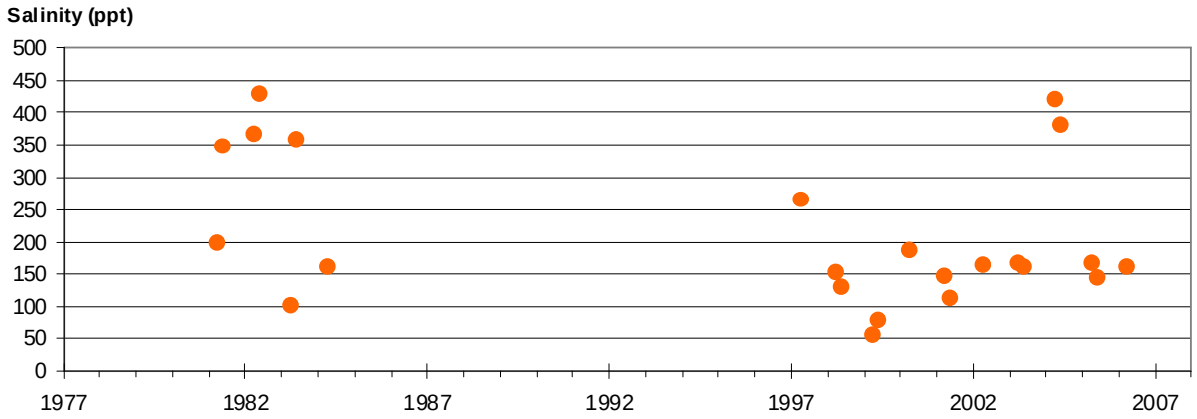
Yarnup is within the Muir-Unicup Natural Diversity Recovery Catchment.

Yarnup is in the Donnelly District (headquartered in Pemberton) of the Warren DEC Region.

YARRA YARRA (C)

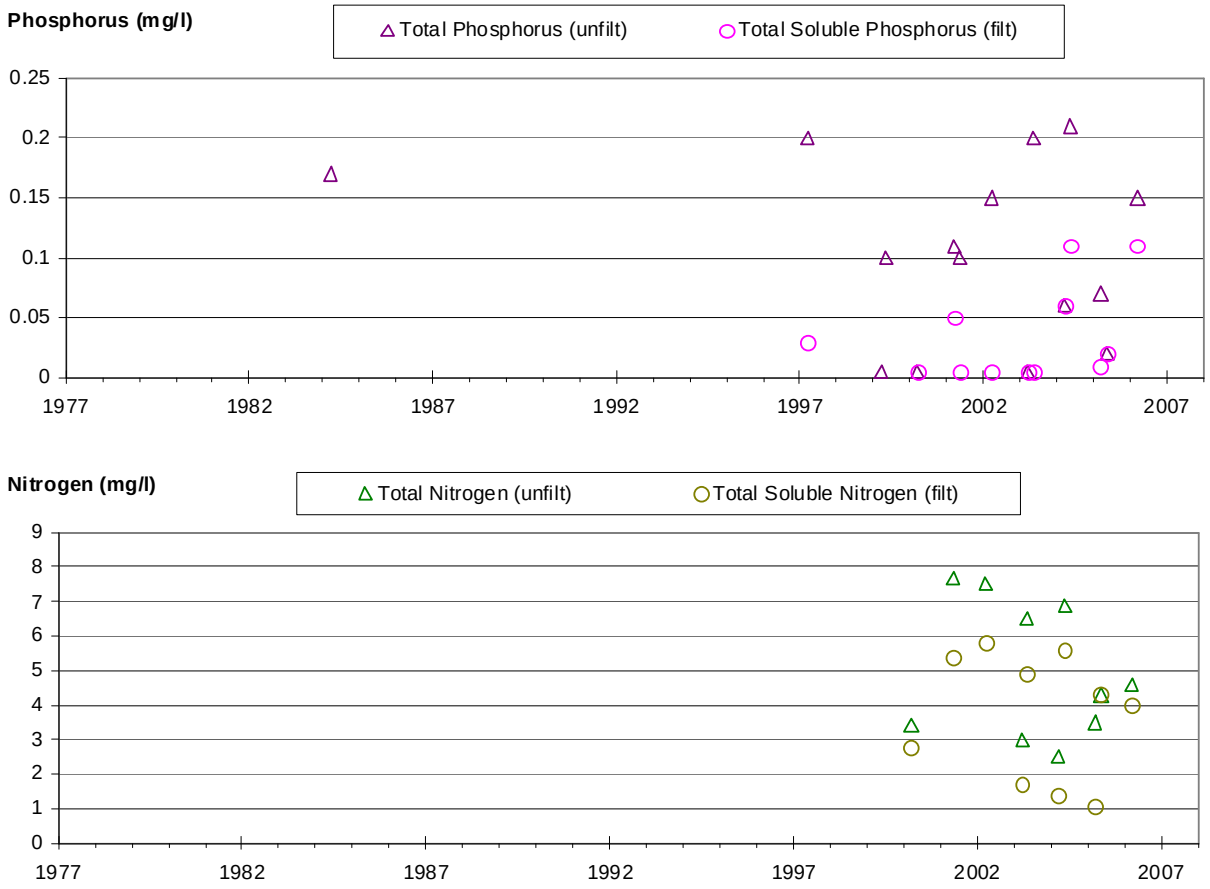






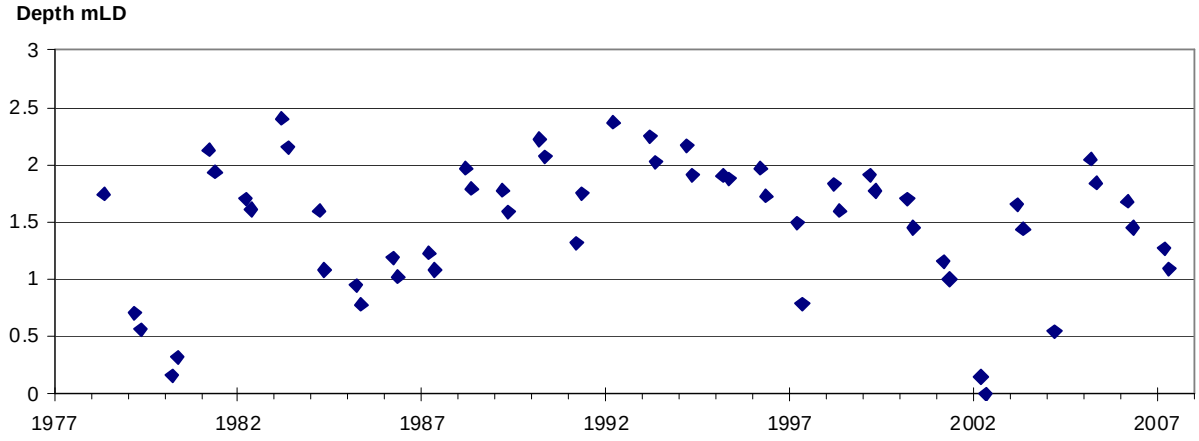
Notes:
1. Year labels are positioned at 1st July each year.
2. Data are from September and November routine monitoring periods only.

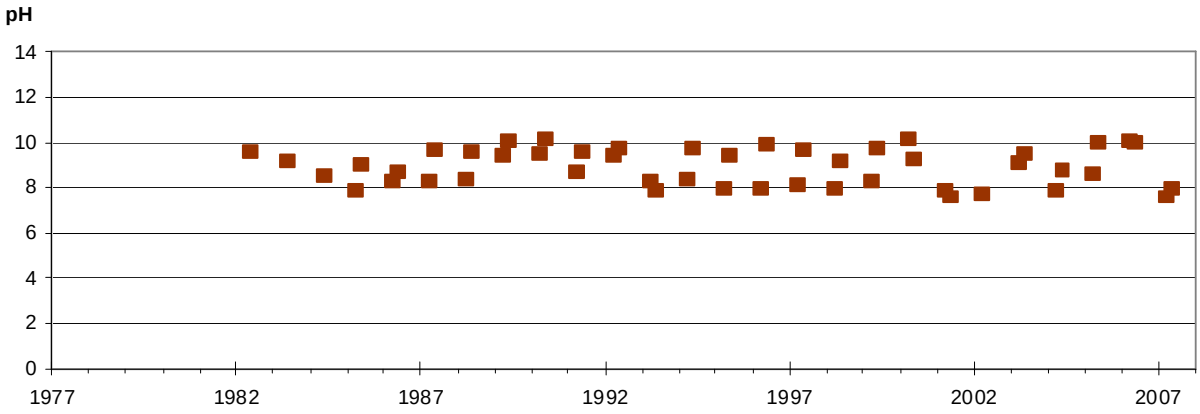
YARRA YARRA

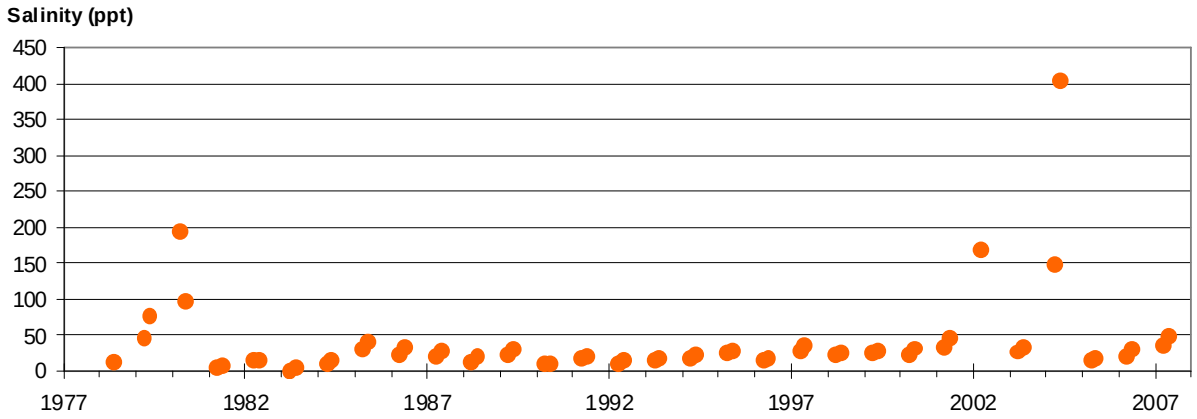


Yarra Yarra is in the Moora District (headquartered in Jurien Bay) of the Midwest DEC Region.

YEALERING (C)







Notes:
1. Year labels are positioned at 1st July each year.
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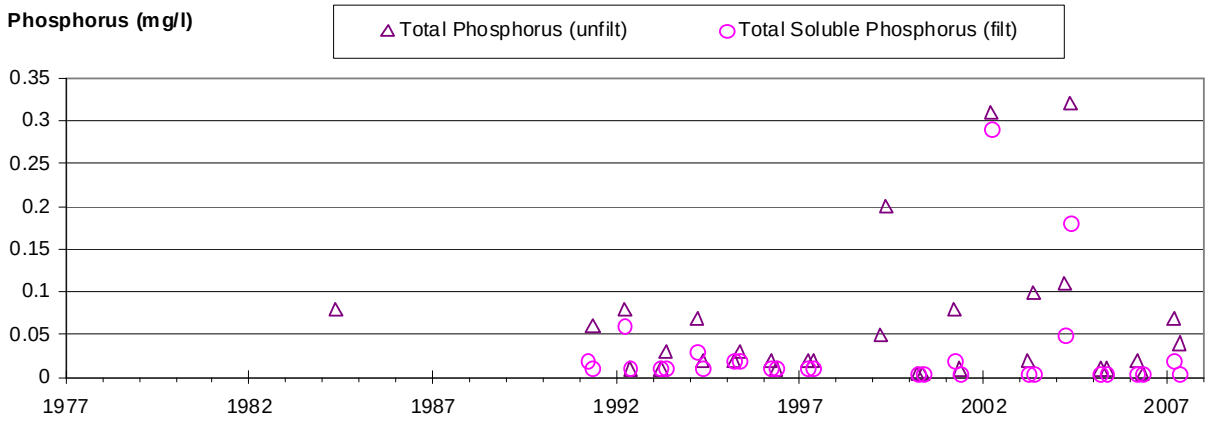
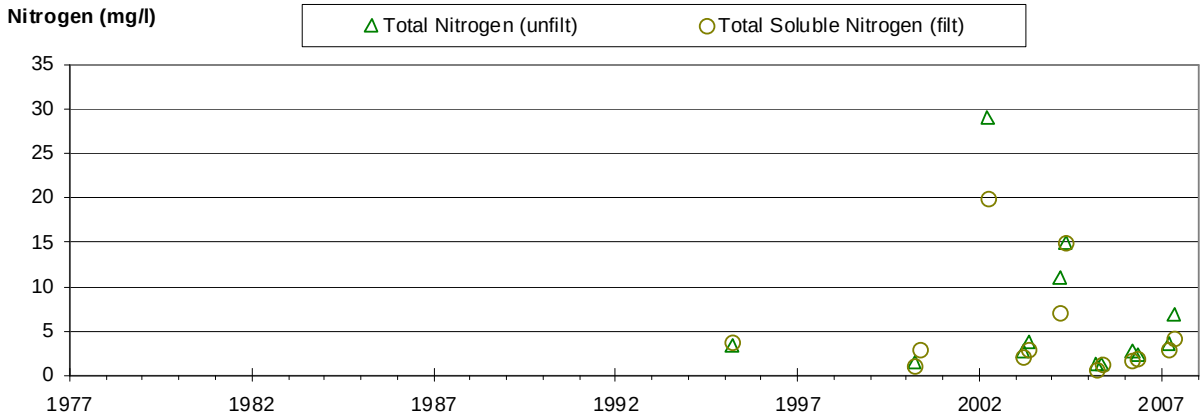
YEALERING

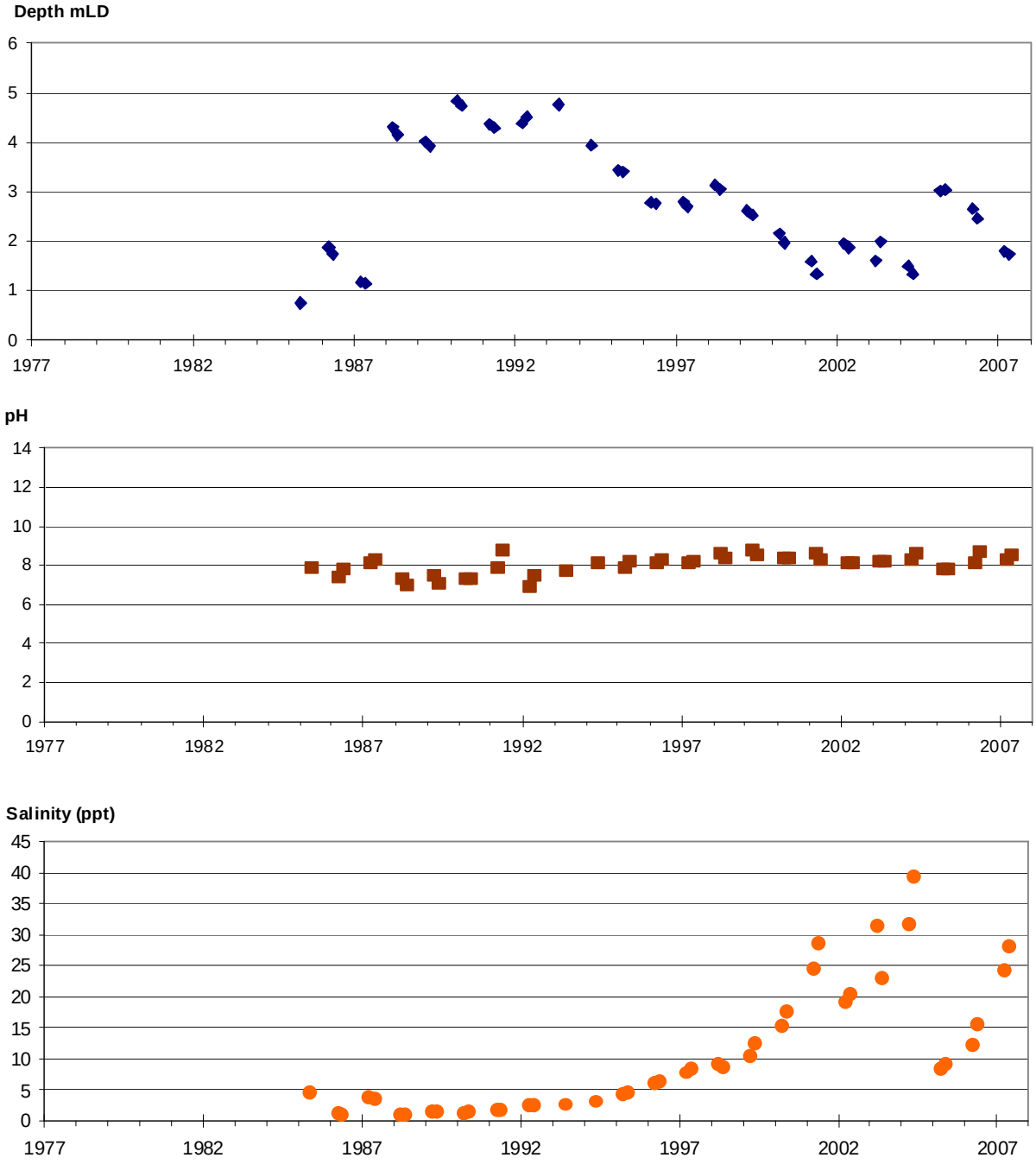




Yealering is a component of the 'Yealering Lakes System', which is listed in the 'Directory of Important Wetlands in Australia'.

Yealering is in the Great Southern District (headquartered in Narrogin) of the Wheatbelt DEC Region.

YELLILUP (C)



Notes:
1. Year labels are positioned at 1st July each year.
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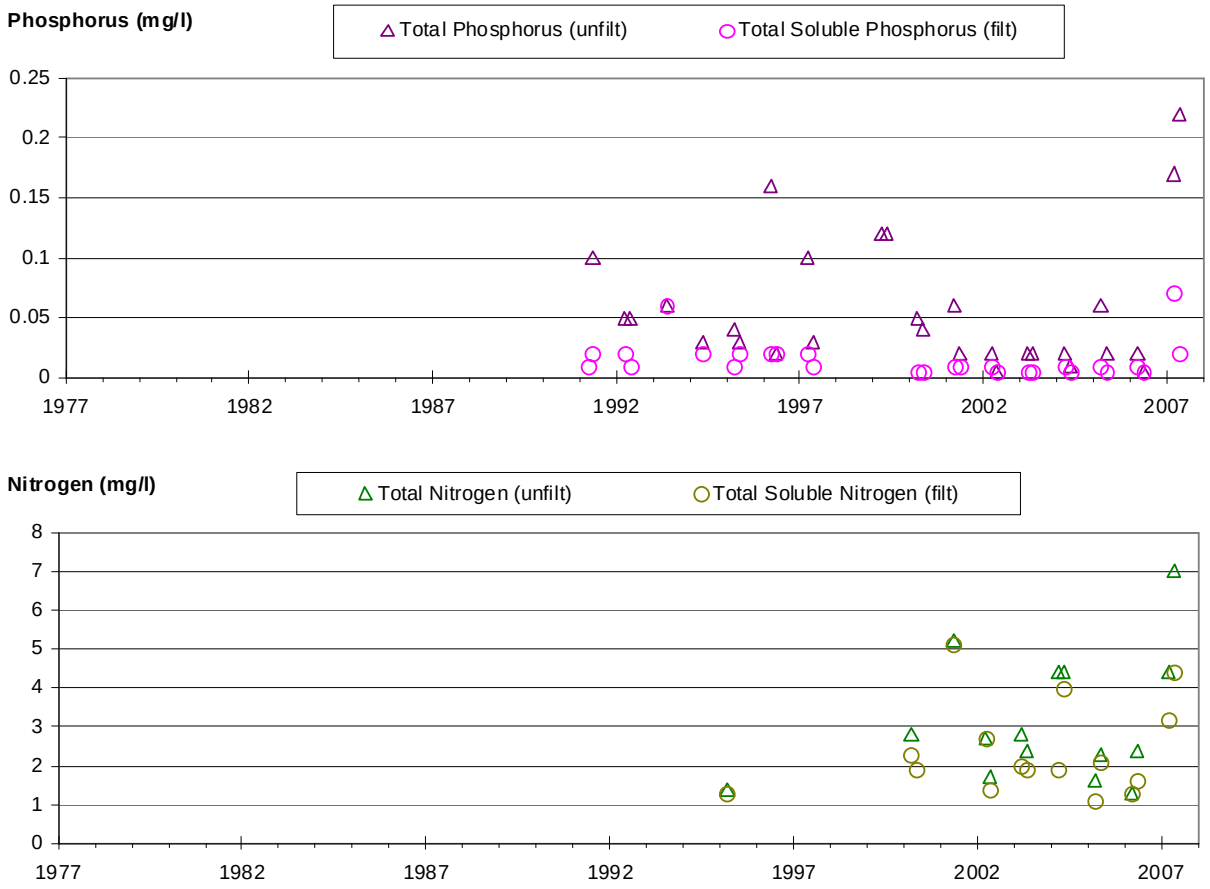
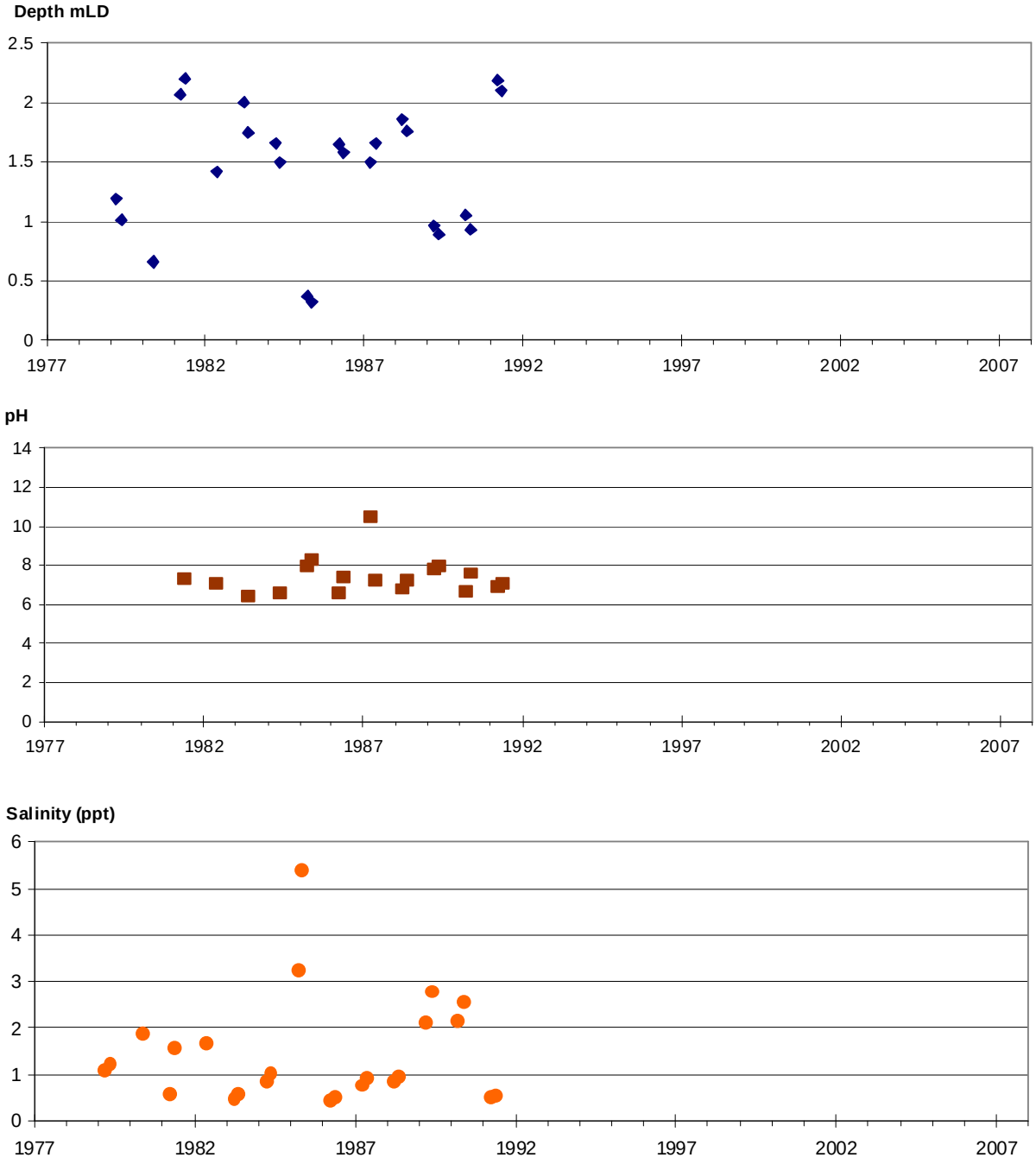
YELLILUP



Yellilup Lake is a component of the 'Yellilup Yate Swamp System', which is listed in the 'Directory of Important Wetlands in Australia'.

Yellilup is in the Albany District of the South Coast DEC Region

YURINE (H)



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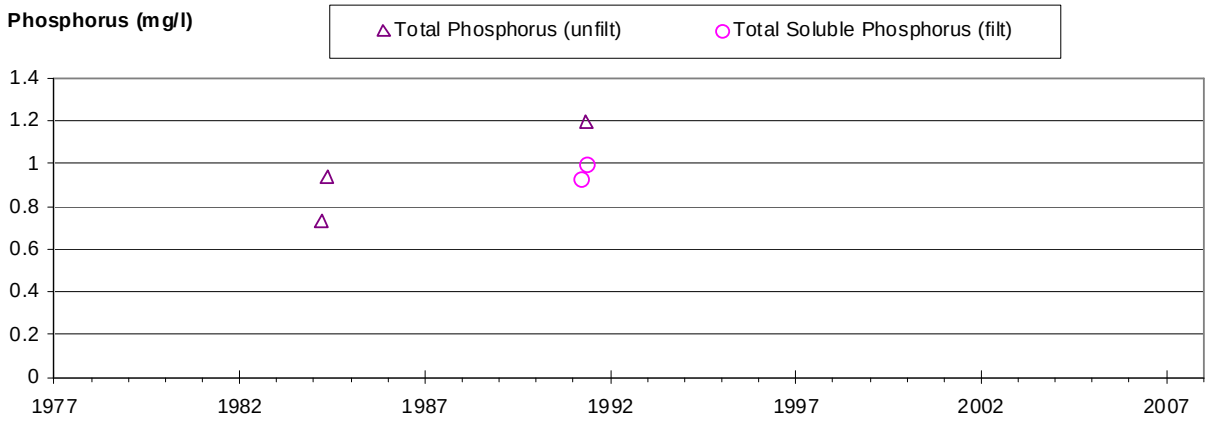
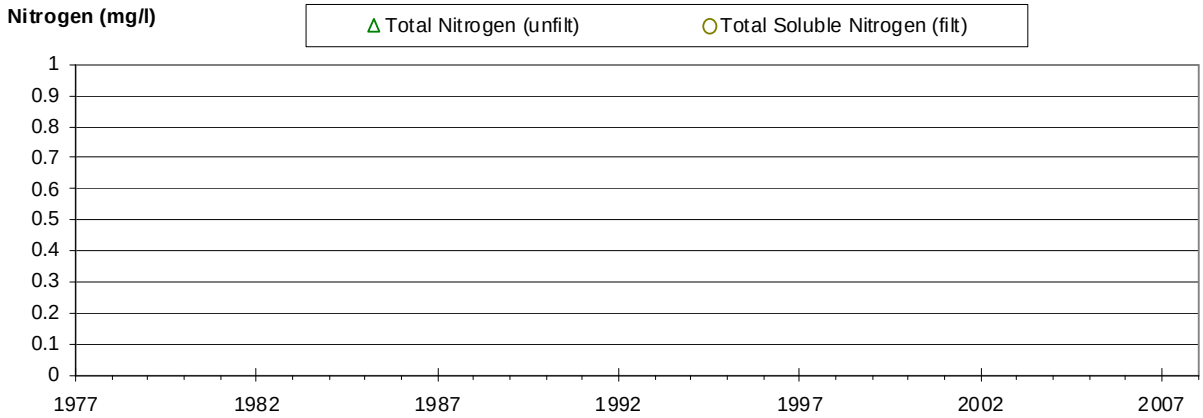
2. Data are from September and November routine monitoring periods only.

YURINE





Yurine is in the Swan Coastal District (headquartered in Wanneroo) of the Swan DEC Region.