

**South West Wetland Monitoring Program**  
**Procedure for Routine Field Data Collection (September & November)**  
**Yvonne Winchcombe**

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**Prior to Field Trip:**

- Science Field Trip Advice forms to be completed and Email/Faxed to relevant Regional/District Managers & Fire Operation Officers at least 24 hours prior to departure.
- Check Department website for any alerts including wildfire or prescribed burns active/pending or any road closures (flooding, wet soil conditions).
- Check BOM website for weather forecast (flooding etc)
- Check Main Roads website for road closures, road works, major incidents.
- Organise vehicle and check serviced, oil, water, tyres, spare tyre etc. Ensure vehicle clean (Dieback Hygiene) and fill up water tank or jerry can with water (hand/boot washing).
- Check pH meters, pH buffer solutions and electrode storage solution.
- Check batteries in GPS, phone, camera and laptop (take spares).
- Check camera date & time correct.
- Print Depth and pH Summaries (Sep or Nov) showing all previous data for wetlands.
- If access to wetlands is via private property please contact relevant owner/plantation manager before entry (ALB2, GINL, BYEN).
- If wetland is within National Park please contact relevant NP ranger for updates on track conditions and any access issues. (PABE, COLL, PILL, MARI)

**Dieback Hygiene:**

- Avoid mud where possible, stay on gravel roads and sandy trails.
- If damp soil conditions walk to gauges to avoid transporting soil/mud.
- If vehicle gets muddy knock off as much as possible and washdown. Use portable 12v pressure spray to clean vehicle before leaving wetland.
- If entering Dieback Quarantine area you must wash down prior to entry at nearest departmental wash-down area.
- Remove any mud from soles of boots/waders before leaving each wetland. Brush soles of boots/waders and spray with bleach solution to prevent spread of dieback and any other soil/water borne diseases.

**Routine Monitoring dates:**

- Routine monitoring is undertaken during the nine-day period commencing on the **second Saturday** of the month for January, March, May, July & September.
- November routine monitoring is undertaken during the nine-day period commencing on the **first Saturday** of the month, this is to fit with historical Duck Shooting Season timetable.

**Equipment Check List:**

Location	Item	Check
File box (keep in cab)	Clipboard with Field Sheets for wetlands to be visited. Depth & pH summary data of all previous visits (Sep or Nov). In November take a copy of that year's September field sheet.	
	Spare pH kit, spare pH probe	

	Wetland File with access maps showing location of depth gauges and datum's. Where there are two or more gauges, these will be labelled on the map and photo.	
	Travellers Atlas and other maps	
	SW Phone book, CALM phone book and phone numbers of farmers/plantation managers that need contacting.	
	Brickies line & level, survey tape, tape measure, electrical tape	
	First Aid Kit plus sunscreen, insect repellent, safety/sunglasses (baumea protection), matches, snake bit kit.	
	Keys for access to Maringup, Albany 27157 (Cheyne), Gingalup.	
	Small field notebook (waterproof), pens/pencils and marker pens	
Instrument box (keep in cab)	GPS – spare batteries, manual	
	Mobile phone or Satellite phone, mains charger, car charger, external aerial & instruction book. Check message bank daily.	
	Compass	
	EPIRB	
	Binoculars	
	Digital camera, spare battery, charger – check batteries and date & time correct at start of trip (take photo of watch to verify camera date/time correct).	
	Headlamp - spare batteries	
Personal gear	Raincoat, sunglasses, hat, safety glasses (Baumea wetlands), hand cream, hand sanitiser, clothes/toiletries, spare vehicle key – keep in zipped pocket in waterproof pouch.	
Sampling kit	2l distilled water, spray bottle, tissues, 500ml sample pot for pH	
	pH meter with fresh buffers, instructions, buffer temperature chart. All pH buffers and electrode storage solution to be replaced each year.	
Sample box	32 x 500ml sample pots (1 per lake for salinity sample)	
Recovery gear	2 recovery straps, wire cable, chain, shackles, battery charge leads	
Safety gear	Life jacket, gloves, funnel for jerry can, detergent, CRC	
Other equipment	Spare fence droppers, axe, shovel, hammer, pliers, tool kit	
	Air compressor, tyre gauge	
	Box with Winch	
	Flexible bucket with waders, bleach spray and stiff brush for cleaning waders/boots	
Camping gear	Food, water, thermos, mug, plate, cutlery, paper towel etc. Tent, sleeping & cooking gear (if required).	
Water	Fill tank in van body or have jerry can of tap water for wash down.	
Wash down	12v pressure sprayer (field wash down)	

#### Procedure:

1. Daily Scheduled Call to HQ at Kensington – 9am. Send txt messages advising location as appropriate (eg. Entering Pillenorup, Leaving Pillenorup...)
2. If 2-way Radio fitted in vehicle, leave on at all time. (Check local channel)
3. Always carry at least one snake bandage (preferably 2) on each person. If bitten apply pressure bandage to bite area and up limb, immobilize limb using splint. Seek medical attention asap.
4. Before leaving wetland wash pH sample bottle, boots/waders and hands.
5. Drive with headlights on and use 4WD when on gravel roads/bush tracks.

6. At each wetland label a 500ml salinity sample bottle on top and side with wetland code and date. At each wetland collect 500ml salinity sample (to be stored) and a pH sample (reuse pH sample pot for each wetland).
7. Triple rinse sample bottles and lids in wetland water before filling sample bottle to top – don't touch inside lids/pots with fingers. Ensure sample taken from undisturbed water 5-10cm below the surface generally in vicinity of gauge read.
8. Record in notebook:
  - 8.1. Wetland name/code
  - 8.2. Date & Time (24hr)
  - 8.3. Gauge Id (letter)
  - 8.4. Depth gauge reading (1, 2, 3 etc. indicates height at top of gauge 1m, 2m 3m).
  - 8.5. If dry at gauge but water in pools in wetland record the lake bed level (LBL) at the gauge and record the depth of water where water sample taken.
  - 8.6. If water level over gauge install a dropper near water's edge and record depth from top of dropper down to water level. Depth to be determined by survey or when gauge becomes visible – try to place dropper so that depth can be determined from existing gauge when water recedes.
  - 8.7. If water level low use lid to scoop undisturbed water into sample bottles.
  - 8.8. Take photo of gauge (even if dry)
9. Store salinity sample in box – check labels stay legible and return to lab for analysis.
10. pH sample analysed on site at each wetland:
  - 10.1. Calibrate pH meter for first sample of day using 2 buffer system according to expected pH of wetland (instructions below). Re-calibrate pH meter with each major change one side of pH 7 to other.
  - 10.2. Note results of recalibration in notebook.
  - 10.3. After calibrating pH meter, wash probe in distilled water and dry with clean tissue. Immerse probe into 1l sample pot. Press **AR** (Auto Read) and press **Run/Enter**. AR button will flash while meter determines pH of sample. When AR stops flashing record pH and temperature. Check if within previous pH range on summary report – if outside range, repeat.
  - 10.4. If any problems wash probe in distilled water, dry with clean tissue and repeat. If problems persist check/replace pH buffers and recalibrate probe.
  - 10.5. Record pH results in notebook and field data sheet.
  - 10.6. Discard pH sample and rinse sample pot in tap water twice to prevent transport of biological material between wetlands.
  - 10.7. Turn off pH meter, disconnect probe and replace storage cap (with electrode solution).

#### **Calibration of WTW pH 320 meter and Schott Blueline 25 pH electrode:**

1. All pH buffers and electrode storage solution to be replaced each year.
2. Connect pH electrode to pH meter – ensure plugged into correct socket.
3. Remove storage cap, wash with distilled water and dry, immerse probe in buffer 7.
4. Turn pH meter **ON** and select **AutoCal TEC** (two point calibration) by toggling through the three options on the green **CAL** button. (Should already be in AutoCal TEC mode.)
5. CE1 will be displayed on screen (top of E missing). CE1 is the start or neutral buffer that must be used to calculate slope from 7 to 10 or 7 to 4 depending on pH of sample.
6. Press **Run/Enter**. The AR button will flash on screen while the meter is calibrating. When the AR button stops flashing CE2 will appear on screen.
7. Remove probe, wash in distilled water, dry with clean tissue and immerse in required buffer for the expected pH range of the sample (either 10 or 4).
8. Press **Run/Enter**. The AR button will flash while the meter calibrates itself. When finished the AR button will stop flashing and the slope will be displayed (mV/pH).

Record slope reading and check if within tolerance of -60 to -55mV. When slope increases to -55mV replace the probe.

9. Press **Run/Enter** and asymmetry value will be displayed. Record value and check if reading exceeds +/- 20mV then replace probe.

10. Press **Run/Enter** and pH of buffer will be displayed. Check reading is close to correct pH for the current temperature of the buffer using table below.

Temp °C	pH 4.00 buffer	pH 7.00 buffer	pH 10.00 buffer
5	4.01	7.09	
10	4.00	7.06	
15	4.00	7.04	10.26
20	4.00	7.02	10.13
<b>25</b>	<b>4.01</b>	<b>7.00</b>	<b>10.00</b>
30	4.01	6.99	9.87
35	4.02	6.98	
40	4.03	6.97	

#### WAERN RADIO OPERATION:

- Hold On/Off button in for 1 second to turn on.
- Use up, down, left, right buttons to select options on screen
- Left button = Zones – scroll up/down to find DEC and press right button to Select
- To select channel either scroll or enter channel number on handset and press right button to Select
- Test channel by pressing trigger on handset – should hear ‘click’ (repeater station), wait 2 seconds and then speak eg. Manjimup Office, Manjimup Office
- Hold in trigger while speaking and talk slowly eg. This is .....
- (Note: Check ‘Talk Around’ is OFF, you will see [>] symbol at top of screen if on)

# South West Wetland Monitoring Program

SHEET: (Office Use Only)	
COLLECTOR:	
MONTH & YEAR:	

PARAMETER	Measured/Analysed by (who):	In Lab. or Field	Instrument/Analysis Method:
Conductivity			
Salinity			
pH			
Temperature			
Total P (unfilt)			
Total P (filtered)			
Total N (unfilt)			

WETLAND (Code)	DATE (dd/mm/yy)	TIME 24hr	RT SV (Y/N)	DEPTH GAUGE (m LD) (DRY/BD)	GAUGE ID (from map)	pH	TEMP. (°C)	STAND COND. (mS/m)	SALINITY (ppt)	TotP (unfilt) (mg/l)	TotP (filt) (mg/l)	LAKE BED LEVEL (m LD)	LBL GAUGE ID (~map)	COMMENT
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														
11.														
12..														
13.														
14.														

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SWWMP Fieldsheet