

2024 Healthy Waterways Strategy Fish Monitoring

Document no: 1
Revision: Final

Melbourne Water

2024 Healthy Waterways Strategy Fish Monitoring
20 September 2024



2024 Healthy Waterways Strategy Fish Monitoring

Client name: Melbourne Water
Project name: 2024 Healthy Waterways Strategy Fish Monitoring
Client reference: **Project no:** IA5000RK
Document no: 1 **Project manager:** Matthew Le Feuvre
Revision: Final **Prepared by:** Matthew Le Feuvre
Date: 20 September 2024 **File name:** MW 2024 Healthy Waterways Strategy Fish Monitoring Final

Document history and status

Revision	Date	Description	Author	Reviewed	Approved
Draft	8/8/2024	Draft Report	Matthew Le Feuvre	Simon Treadwell	Simon Treadwell
Final	20/9/2024	Final Report	Matthew Le Feuvre	Simon Treadwell	Simon Treadwell

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments
Draft	Simon Treadwell	8/8/2024	Al Danger, Ryan Burrows	Draft for Melbourne Water review
Final	Simon Treadwell	20/9/2024	Al Danger, Ryan Burrows	Final version

Jacobs Group (Australia) Pty Ltd

Floor 13, 452 Flinders Street
Melbourne, VIC 3000
PO Box 312, Flinders Lane
Melbourne, VIC 8009
Australia

T +61 3 8668 3000
F +61 3 8668 3001
www.jacobs.com

© Copyright 2024 Jacobs Group (Australia) Pty Ltd. All rights reserved. The content and information contained in this document are the property of the Jacobs group of companies ("Jacobs Group"). Publication, distribution, or reproduction of this document in whole or in part without the written permission of Jacobs Group constitutes an infringement of copyright. Jacobs, the Jacobs logo, and all other Jacobs Group trademarks are the property of Jacobs Group.

NOTICE: This document has been prepared exclusively for the use and benefit of Jacobs Group client. Jacobs Group accepts no liability or responsibility for any use or reliance upon this document by any third party.

Executive summary

The Healthy Waterways Strategy (HWS) 2018-28 sets out a strategy for managing the health of rivers, wetlands and estuaries in the Melbourne Water Management Region (Port Phillip and Westernport regions). To assess progress against HWS objectives and to understand the success of their investment programs, MW collect data to inform annual reporting. Data gathering for such reporting follows the Monitoring Evaluation Reporting and Improvement (MERI) framework. The MERI was developed to provide guidance for data collection and reporting so that Melbourne Water (MW) can conduct condition reporting of key values and conditions, track progress towards objectives, and evaluate and understand the effectiveness of management actions so that they can improve decision making regarding catchment management. One of the key ecological values outlined in the HWS is fish communities. To achieve this monitoring aim, MW engaged Jacobs to undertake fish surveys across the Werribee, Maribyrnong, Yarra, Dandenong, and Western Port catchments within the Melbourne Water Management Region and to report the findings for later analysis in line with the MERI framework.

Surveys were undertaken at 24 sites across the Werribee (4 sites), Maribyrnong (3 sites), Yarra (7 sites), Dandenong (2 sites), and Western Port (8 sites) catchments within the Melbourne Water Management Region. The majority of sites were surveyed in late Autumn, between the 9-19th May 2024, but due to an e-flows release the site at the Upper Yarra site was not surveyed until 26 June 2024. Eight of the priority riverine species outlined in the MERI, were present at one or more of the study sites, which provides support for their choice as monitoring locations: Australian Grayling (*Prototroctes maraena*), Common Galaxias (*Galaxias maculatus*), Ornate Galaxias (*Galaxias ornatus*), River Blackfish (*Gadopsis marmoratus*), Short-finned Eel (*Anguilla australis*), Shorthead Lamprey (*Mordacia mordax*), Southern Pygmy Perch (*Nannoperca australis*), Tupong (*Pseudaphritis urvillii*), and Yarra Pygmy Perch (*Nannoperca obscura*). Pouched Lamprey (*Geotria australis*) were recorded for the first time as part of this program.

Notable non-detections relative to expectations included Dwarf Galaxias (*Galaxias pusilla*) that were not captured in Balcombe Creek or Upper Dandenong Creek where they were target species. Australian mudfish were not detected on the Yarra River below Dights Falls, although they have not been detected there for many years. All other target species were detected, but not necessarily at all sites where they were targeted.

We conducted an analysis of catchment condition based on species richness and nativeness indices, which indicated that each of the MW catchments are in low (Maribyrnong and Dandenong) or high (Yarra, Werribee and Western Port) condition. We also investigated various health metrics related to non-migratory priority species. These results showed that Young of Year (YOY) and 1+ year old Ornate galaxias were present in the Yarra catchment, suggesting successful recruitment is occurring and individuals are surviving to reproductive age. However, for the third consecutive year only 1+ fish were observed in the Werribee catchment at the Lerderderg Gorge site. This result indicates the continuing poor health of this population.

For River Blackfish in the Yarra catchment, both YOY and 1+ fish were present, suggesting successful recruitment during the last breeding season and that individuals are surviving to reproductive age. River Blackfish were once again recorded at Werribee Gorge, having not been recorded in 2023. However, abundance was considerable lower than 2022.

For Southern Pygmy Perch, YOY were recorded in all catchments, indicating successful recruitment, however no adults were recorded in the Maribyrnong catchment this year, indicating that survivorship is low.

Based on the results we recommend the following actions:

- To better target Dwarf Galaxias, the survey site in Balcombe Creek could be moved to known core habitat upstream of Bungower Road, or an additional site added along Balcombe Creek in areas known to support Dwarf Galaxias.

- While fyke netting was undertaken at the Maribyrnong River site this year, no Australian Grayling were caught. However overall catch at this site was very low this year and the four fyke nets yielded a total of only two Southern Shortfin Eels. As such it is recommended fyke netting continues next year at this site.
- Additional survey effort (fyke netting) could also be considered to target Australian Grayling at the Lower Yarra Site.
- To better understand the River Blackfish populations in Werribee Gorge and Lerderderg Gorge additional survey sites within and upstream of the gorges should be considered in 2025 so the status of these poorly known and potentially imperilled populations can be better understood. Additional sites in Lerderderg Gorge would also help determine if and where successful Ornate Galaxias recruitment is taking place and to provide a clearer picture of overall population health. This is a necessary step if early intervention is to take place for any of these populations.

In summary, the aims of the project were achieved. The results add to the previous year of sampling and provide a sound point of comparison against future surveys. Furthermore, the data is recorded in such a way that it can be analysed in line with the MERI. Finally, our brief analysis aids with interpretation of the data, providing some general insight into catchment condition and the status of the non-migratory priority species.

Contents

Executive summary.....	iii
1. Introduction.....	1
2. Methods.....	2
2.1 Recording of water quality and physical habitat.....	4
2.2 Fish surveys.....	5
2.2.1 Data collection.....	5
2.2.2 Electrofishing.....	5
2.2.3 Bait traps.....	5
2.2.4 Dip netting.....	6
2.2.5 Fyke netting.....	6
2.2.6 Data analysis and presentation.....	7
3. Results.....	9
3.1 Water quality and physical habitat.....	9
3.2 Fish communities.....	14
3.2.1 Werribee catchment.....	14
3.2.2 Maribyrnong Catchment.....	16
3.2.3 Yarra catchment.....	18
3.2.4 Dandenong catchment.....	20
3.2.5 Western Port catchment region.....	22
3.3 Community-level condition.....	25
3.4 Priority species assessment.....	25
3.4.1 Ornate Galaxias (<i>Galaxias ornatus</i>).....	25
3.4.2 River Blackfish (<i>Gadopsis marmoratus</i>).....	27
3.4.3 Southern Pygmy Perch (<i>Nannoperca australis</i>).....	29
3.4.4 Yarra Pygmy Perch (<i>Nannoperca obscura</i>).....	31
4. Discussion.....	32
5. Recommendations.....	36
6. References.....	37

Appendices

Appendix A. Field data sheets.....	39
------------------------------------	----

Tables

Table 1 Study sites, site specific target species and locations. Words in bold indicate site names used in this report. Sites that were moved between the 2023 and 2024 survey program are highlighted in blue.....	2
---	---

Table 2. Survey methods and effort undertaken at each survey site in 2024.....	6
Table 3 Metrics for assessing fish community condition at the catchment scale (adapted in part from King et al. 2020).....	7
Table 4 List of priority non-migratory fish species for monitoring in the MW management region and rationale for their selection (adapted in part from King et al. 2020).	8
Table 5 Water quality and physical habitat recordings at each study site. Physical habitat observations are presented as the percent of electrofishing shot reaches where they those habitat features were observed (e.g. boulders were present where 4 out of 8 (50%) electrofishing shots were conducted). Velocity is given as a range across the site (Fast = F, Medium = M, Slow = S, or No Flow = NF).	11
Table 6 Catch data for Werribee catchment sites. Data are presented as number of individuals caught at each site, with individuals observed but not captured in parentheses. Aggregate metrics are presented for each species and site.	15
Table 7 Catch data for Maribyrnong catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.....	17
Table 8 Catch data for Yarra catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.....	19
Table 9 Catch data for Dandenong catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.....	21
Table 10 Catch data for Western Port catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.....	23
Table 11 Catchment level fish community status ratings. VL = Very Low (red), L = Low (orange), M = Moderate (yellow), H = High (light green), VH = Very High (dark green).	25
Table 12 Metrics for monitoring the status of Ornate Galaxias (<i>Galaxias ornatus</i>) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing.	26
Table 13 Metrics for monitoring the status River Blackfish (<i>Gadopsis marmoratus</i>) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing. Note that the two River Blackfish in the Westernport Catchment were observed but not captured, as were two Blackfish from the Yarra Catchment, hence their size and age could not be determined.....	28
Table 14 Metrics for monitoring the status Southern Pygmy Perch (<i>Nannoperca australis</i>) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing.	30
Table 15 Metrics for monitoring the status Yarra Pygmy Perch (<i>Nannoperca obscura</i>) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing.	31

Figures

Figure 1. The location of fish survey sites (dots) within each of the major catchments within the Melbourne Water Management Region.....	4
Figure 2 Size class frequency for Ornate Galaxias (<i>Galaxias ornatus</i>) in each catchment it was detected in 2022-2024. Young-of-year fish ($\leq 50\text{mm}$) are highlighted in blue. Note that each column represents the number of fish that fall within a particular 5mm size class (e.g. 0-4mm, 5-9mm, 10-14mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls.....	27
Figure 3 Size class frequency for River Blackfish (<i>Gadopsis marmoratus</i>) in each catchment it was detected in 2022, 2023 and 2024. Young of year fish ($\leq 80\text{mm}$) are highlighted in blue. Note that each column represents the number of fish that fall within a particular 25mm size class (e.g. 0-24mm, 25-49mm, 50-74mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls.	29

Figure 4 Size class frequency for Southern Pygmy Perch (*Nannoperca australis*) in each catchment it was detected in 2022, 2023 and 2024. Young of year fish (≤ 45 mm) are highlighted in blue. Note that each column represents the number of fish that fall within a particular 5mm size class (e.g. 0-4mm, 5-9mm, 10-14mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls. 30

Figure 5 Size class frequency for Yarra Pygmy Perch (*Nannoperca obscura*) in each catchment it was detected in 2022 and 2023. Young of year fish are highlighted in blue. Note that each column represents the number of fish that fall within a particular size class (e.g. 0-4mm, 5-9mm, 10-14mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls..... 31

1. Introduction

The Healthy Waterways Strategy 2018-28 sets a long-term vision for managing the health of rivers, wetlands and estuaries in the Port Phillip and Westernport region. As waterway managers in the region, Melbourne Water (MW) are responsible for monitoring the progress of the Healthy Waterways Strategy (HWS).

To assess progress against HWS objectives and to understand the success of their investment programs, MW collect information to inform annual reporting, leading towards an end-of- strategy (2026) review. A key component of the information gathering, and reporting process is the Monitoring Evaluation Reporting and Improvement framework (MERI) (King *et al.* 2020). The framework is in place to guide the monitoring programs which are required to inform the HWS reporting and reviews. The MERI objective is to assess if the performance objectives and targets for each major catchment are being achieved. A key success measure is the state or condition of key values (birds, fish, frogs, etc.), and whether each key value is achieving its projected trajectories, objectives and targets. As one of the key waterway values set out in the HWS, monitoring programs have been put in place to track the state and trajectory of fish values in the region. This monitoring program has been established to complement other programs measuring progress against the objectives and targets set for fish in the region and commenced in 2022, and this project represents the third round of surveys (Jacobs 2022; Jacobs 2024a).

In April 2024, MW engaged Jacobs to undertake the third year of fish surveys across the Port Phillip and Westernport regions as part of the HWS program. The aim of the project is to undertake fish surveys across the Werribee, Maribyrnong, Yarra, Dandenong, and Western Port catchments within the Melbourne Water Management Region.

This report documents the outcomes of the current years survey results. The results will be used for later analysis in line with the MERI framework.

2. Methods

Surveys were undertaken at 24 sites across the Werribee (4 sites), Maribyrnong (3 sites), Yarra (7 sites), Dandenong (2 sites), and Western Port (8 sites) catchments within the Melbourne Water Management Region in late Autumn and early Winter. The majority of sites were surveyed between the 9-19th May 2024. However, due to an e-flow release from Upper Yarra Dam, site YAR-42313-7 below the dam was not surveyed until 26th June 2024. Flows were relatively stable and weather conditions were suitable for fish sampling (Appendix A)

The sites were selected by MW prior to the first year of sampling in 2022, with some refinement of specific site locations based on input from Jacobs. Site selection was based on proximity to previous sampling sites and fish records, known or likely habitat for fish, the representative nature of a site in the broader system, location relative to fish barriers that may impact fish population and movement, or proximity to previous eDNA and water quality sampling sites. Site were then subsequently refined in 2023 due to a variety of factors including access, safety and habitat at the site. No additional sites were included in 2024.

Following sampling in 2023, one site (CDC-10600-4 on Lower Cardinia Creek) was determined to be not suitable and was moved. The target species for this site is Australian Grayling (*Prototroctes maraena*), and the original site was located above the Thompson Road drop structure which represents a considerable barrier to Australian Grayling migration. Based on recommendations in Jacobs (2024), the site was moved below the Thompson Road drop structure. Based on previous surveys (Jacobs 2021) and discussions with Melbourne Water, the McCormacks Rd/Chasemore Road bridge was chosen as the new site. A full list of site codes, descriptions, and coordinates (at the downstream end of study reach) are listed in Table 1 and shown in Figure 1.

It should be noted that the primary habitat for Dwarf Galaxias (*Galaxiella pusilla*) is an off channel wetland habitat, hence the likelihood of catching this species in riverine habitat is low except in specific circumstances (e.g. known habitat on Balcombe Creek). The flow MER notes that for Dwarf Galaxias "Population health surveys covered in the Wetlands MEP" (King et al. 2020)

During sampling, the location coordinates of the upstream and downstream ends of the sampling reach were recorded to ensure that study reach can be accurately relocated during subsequent surveys (see Appendix A for both downstream and upstream coordinates).

Table 1 Study sites, site specific target species and locations. Words in bold indicate site names used in this report. Sites that were moved between the 2023 and 2024 survey program are highlighted in blue.

Site code	Catchment	Site description and MW site target species	Latitude	Longitude
LER-22832-7	Werribee River	Lerderberg Gorge , Lerderberg River, Mackenzies Flat Picnic Area. Target species: River Blackfish and Short-headed lamprey	-37.61468	144.42484
WERRIBEE GORGE		Werribee Gorge , upstream of Meikles Point picnic area. Target species: River Blackfish	-37.67258	144.36253
WER-30289-9		Middle Werribee River , Werribee Vale Road, downstream of diversion weir. Target Species: Australian Grayling (although site is above the Melton Reservoir)	-37.67916	144.37922
WER-138085-6		Lower Werribee River , Werribee River, downstream of lower diversion weir, off Redgum Close. Target species: Tupong, Common Galaxias, Short-finned Eel	-37.88260	144.64074

2024 Healthy Waterways Strategy Fish Monitoring

Site code	Catchment	Site description and MW site target species	Latitude	Longitude	
DPW-13586-2	Maribyrnong River	Upper Deep Creek , Deep Creek at Musteys Bridge. Target species: Yarra Pygmy Perch and Southern Pygmy Perch	-38.21579	145.09347	
DPW-63085-7		Lower Deep Creek , Deep Creek, Konagaderra Bridge Reserve, off Konagaderra Rd. No target species.	-37.55105	144.84959	
MRB-130320-2		Maribyrnong River , off Flora Street, Keilor, 100m d/s of Calder Fwy crossing. Target species: Australian Grayling.	-37.72097	144.83980	
PLE-16938-4	Yarra River	Plenty River , accessed from parklands off Laurel Street No target species.	-37.51481	145.12621	
ART-4232-0		Diamond Creek , below confluence with Arthurs Creek, upstream of Arthurs Creek Road. Target species: Tupong	-37.63724	145.19173	
NCC-3576-4		New Chum Creek , downstream from Blackwoods Road crossing. Target species: River Blackfish	-37.61969	145.49809	
YAR-42313-7		Upper Yarra River at reservoir gate. Target species: River Blackfish and Short-headed Lamprey	-37.67416	145.87355	
YAR-374049-3		Lower Yarra River , immediately downstream of Dights Falls. Target species: Australian Mudfish	-37.79699	145.00099	
HDL-2685-5		Hoddles Creek , Hoddles Creek Bushland Reserve, upstream of Glenview Road bridge crossing. Target species: River Blackfish, Short-headed Lamprey and Tupong	-37.79669	145.58481	
WOY-8964-3		Woori Yallock Creek , off Macclesfield Road. Target species: River Blackfish and Short-headed Lamprey	-37.81328	145.50353	
DNG-13753-1		Dandenong Creek	Upper Dandenong Creek , downstream end at High Street Road Bridge. Target species: Dwarf Galaxias.	-37.87656	145.19189
DNG-31881-2			Lower Dandenong Creek , upstream of fishway, off Perry Road. No target species.	-38.02988	145.18458
BLC-3709-0		Western Port	Balcombe Creek , upstream end of the Briars Parkland, within swamp and defined creek, upstream of the confluence with Devil Bend Creek. Target species: Dwarf Galaxias.	-38.26683	145.05521
CDC-7795-5	Upper Cardinia Creek , upstream of Luke Place bridge. No target species.		-38.01169	145.38379	
CDC-10600-4	Lower Cardinia Creek , at McCormacks Rd/Chasemore Road Crossing. Target species: Australian Grayling.		-38.08553	145.38149	
BNY-11161-3	Upper Bunyip River , Bunyip State Forest, upstream from start of Freemans Mill Track, off Aqueduct Track. Target species: Short-finned Eel, River Blackfish, Short-headed Lamprey, Southern Pygmy Perch and Tupong		-37.97040	145.73629	
BNY-70608-3	Lower Bunyip River , at the intersection of Main Drain Road and Dessent Road.		-38.13716	145.64400	

2024 Healthy Waterways Strategy Fish Monitoring

Site code	Catchment	Site description and MW site target species	Latitude	Longitude
		Target species: Short-finned Eel, Common Galaxias, and Tupong		
TAR-22224-5		Tarago River , Tarago River Picnic Point Reserve, off Princes Way. Target species: Short-finned Eel, Common Galaxias and Tupong	-38.08323	145.81177
LNG-29460-1		Lang Lang River in stream reserve off Camerons Road. Target species: Tupong and Short-headed Lamprey	-38.23992	145.61047
BAS-22307-6		Bass River , private property immediately upstream of Grantville-Glen Alvie Road bridge. No target species.	-38.43674	145.56327

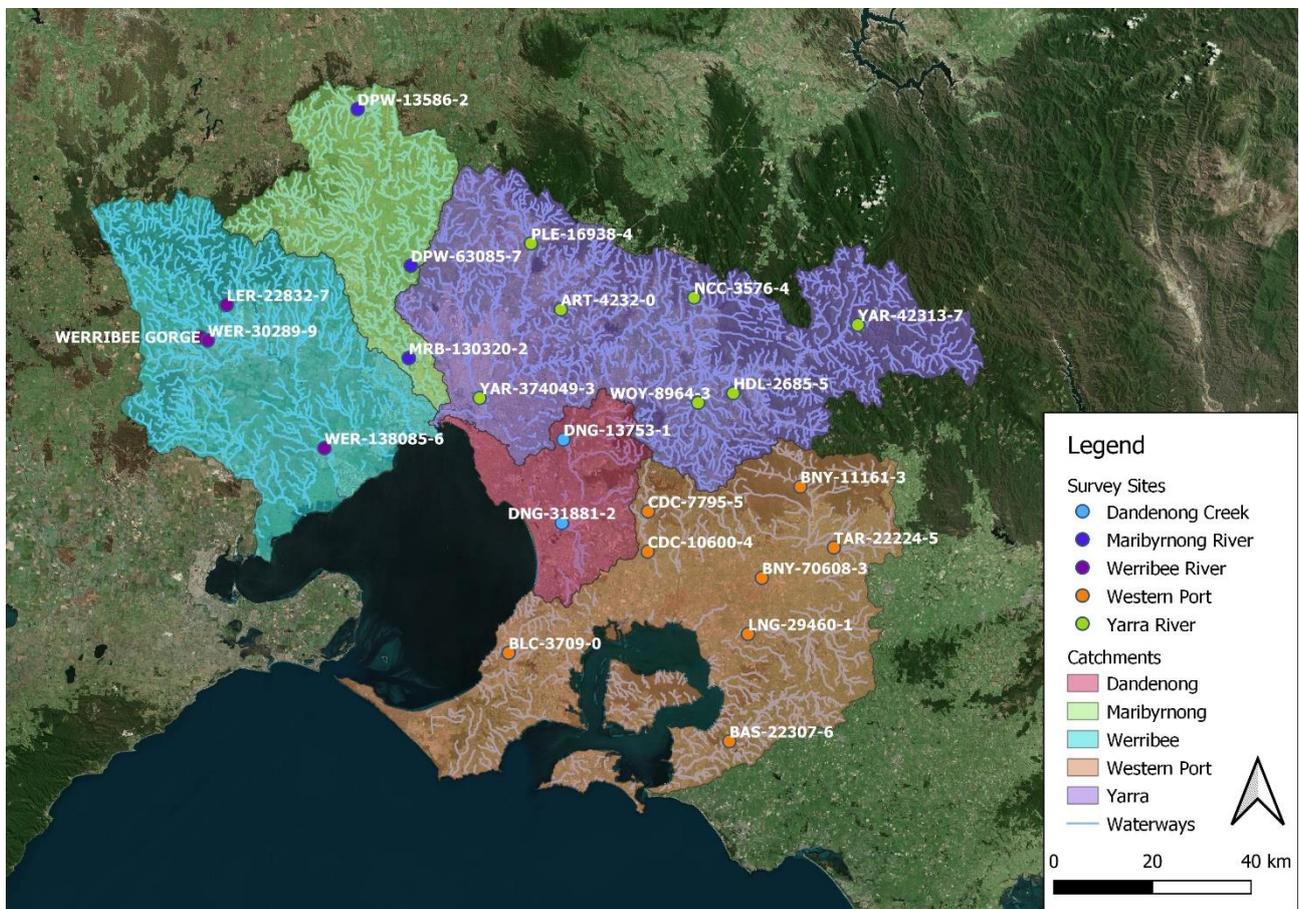


Figure 1. The location of fish survey sites (dots) within each of the major catchments within the Melbourne Water Management Region

2.1 Recording of water quality and physical habitat

An instream habitat assessment was undertaken at all sites surveyed following the specified MW format (Appendix A). This assessment included in-situ measurement of water quality parameters and estimation of biological and physical attributes (e.g. wetted instream cover, riparian shading, aquatic vegetation, substrate

composition, flow and depth). A site map was drawn for the new site (Lower Cardinia Creek), site maps are available for all other sites in Jacobs (2022; 2024a).

Water quality measurements were taken at each site prior to other surveys being undertaken using a calibrated YSI ProPlus water quality meter. Water quality variables measured were:

- Temperature
- pH
- Conductivity
- Turbidity
- Specific Conductivity
- Dissolved Oxygen (mg/L and % saturation)

In line with the project brief, this data is summarised here and broadly discussed in such a way to allow for assessment of the physical conditions that may affect sampling efficiency and fish condition at each site. It may also be used as a point of reference when interpreting changes in fish communities during any subsequent surveys.

2.2 Fish surveys

2.2.1 Data collection

The fish survey aimed to collect the following variables from each site:

- Species present
- Number of each species caught
- Lengths of individual fish (if necessary, a sub-sample of 30 fish per site/ per species/ per method was measured)
- Health and condition of individuals (parasites, lesions, diseases, and abnormalities (sub-sampled where necessary))

All fish captured were identified, weighed and measured prior to release. Fish that were observed but not captured were also recorded.

2.2.2 Electrofishing

Fish monitoring was conducted using an E-Fish backpack electrofisher following Sustainable Rivers Audit methods (MDBC 2008). In brief, 8 x 150 second power-on electrofishing shots were made, moving in an upstream direction over a continuous stream reach, with all representative habitat types being fished. Sampling effort (pulse time on), and voltage and ampere settings were recorded (Appendix A). Survey effort at each site is documented in Table 2.

Electrofishing was conducted by a suitably qualified senior electrofisher operator and an experienced assistant. All electrofishing was conducted in accordance with the Australian Code of Electrofishing Practice (SCFFA 1997).

2.2.3 Bait traps

At each site 10 bait traps were deployed in water less than 1 m depth. Traps were not baited and were set in slow flowing or backwater areas independent from electrofishing. Traps were set for the duration of the site visit, typically being cleared after 1.5-2 hours. Fish captures were recorded for each individual trap. Survey effort at each site is documented in Table 2.

2.2.4 Dip netting

Targeted dip netting was conducted over a 10-minute period at where small-bodied priority species (see Table 4) were predicted to be present but were not caught with the electrofisher or bait traps. As the target species Dwarf Galaxias were not captured at Upper Dandenong Creek and Balcombe Creek in 2022 or 2023, 30 minutes of dip netting was undertaken at these two sites. During a random walk of the site, the dip nets were pushed through vegetation and checked for fish catch between dips. Ultimately, dip netting was undertaken at Upper Deep Creek (DPW-13586-2), Upper Cardinia Creek (CDC-7795-5) Balcombe Creek (BLC-3709-0), Upper Bunyip River (BNY-11161-3), and Dandenong Creek (DNG-13753-1). Survey effort at each site is documented in Table 2.

2.2.5 Fyke netting

As the target species (Australian Grayling) had not been caught at the Maribyrnong River site (MRB-130320-2), Jacobs (2024) recommended setting fyke nets overnight at this site. Four 2-4mm mesh fyke nets with a single 5m wing were deployed overnight. Fyke nets were equipped with a 50mm exclusion devices to prevent the accidental capture of non-target species (e.g. Platypus) and a float was also placed in the cod end to provide a pocket of air as contingency. The cod end of the fyke net was tied to the bank, and the fyke was orientated downstream on an angle so it extended approximately one-third of the way across the channel. Fyke nets were set overnight for approximately 16 hours, with the nets deployed in the late afternoon and retrieved early in the morning. Fish captures were recorded for each individual net.

Table 2. Survey methods and effort undertaken at each survey site in 2024.

Catchment	Site	Electrofishing Time (sec)	Bait Traps #	Bait Trap time (mins)	Dip Net	Dip net time (mins)	Fyke Nets #	Fyke Nets Time (Mins)
Werribee River	LER-22832-7	1200	10	100	N	-	-	-
	WERRIBEE GORGE	1200	10	110	N	-	-	-
	WER-30289-9	1200	10	70	N	-	-	-
	WER-138085-6	1200	10	85	N	-	-	-
Maribyrnong River	DPW-13586-2	1200	10	110	Y	10	-	-
	DPW-63085-7	1200	10	80	N	-	-	-
	MRB-130320-2	1200	10	75	N	-	4	970
Yarra River	PLE-16938-4	1200	10	80	N	-	-	-
	ART-4232-0	1200	10	80	N	-	-	-
	NCC-3576-4	1200	10	90	N	-	-	-
	YAR-42313-7	1200	10	120	N	-	-	-
	YAR-374049-3	1200	10	110	N	-	-	-
	HDL-2685-5	1200	10	105	N	-	-	-
Dandenong Creek	WOY-8964-3	1200	10	90	N	-	-	-
	DNG-13753-1	1200	10	120	Y	30	-	-
Western Port	DNG-31881-2	1200	10	85	N	-	-	-
	BLC-3709-0	1200	10	130	Y	30	-	-
	CDC-7795-5	1200	10	90	Y	10	-	-
	CDC-10600-4	1200	10	80	N	-	-	-
	BNY-11161-3	1200	10	95	Y	10	-	-

	BNY-70608-3	1200	10	90	N	-	-	-
	TAR-22224-5	1200	10	90	N	-	-	-
	LNG-29460-1	1200	10	80	N	-	-	-
	BAS-22307-6	1200	10	60	N	-	-	-

2.2.6 Data analysis and presentation

The MERI outlines a number of metrics, that can be informed by the type of data collected in this project, that provide insight into community and species level health at individual monitoring sites and more broadly across the MW catchments. As the scope of this project is limited to a more general overview of the results of the survey, we only present what we consider to be the key findings that help with the overall interpretation of results.

2.2.6.1 Community level metrics

At the community level we focussed on species richness and nativeness (i.e. the proportion of native species compared to exotic species), using an adaptation of the catchment-level metrics of condition presented in the MERI for guide our interpretation of the results (Table 3). Notably, we did not include an analysis of observed versus expected species richness. Furthermore, we used proportional abundance rather than biomass as a measure of nativeness as we considered it a more reliable measurement; eels (often the heaviest native fish) are very difficult to weigh in the field and can greatly skew biomass results. We combined the fish community condition scores by assigning values of 1-5 (1 = very low, 5 = very high) to each metric and calculating the overall median score. This is to provide an overall catchment condition rating, but we note that this is not a complete assessment, and the results should be interpreted accordingly.

Table 3 Metrics for assessing fish community condition at the catchment scale (adapted in part from King et al. 2020).

Metric	Very high	High	Moderate	Low	Very low
Species richness	>8 native species	7-8 native species	4-6 native species	2-3 native species	<2 native species
Nativeness (species richness)	>90% native species	70-89% native species	50-69% native species	30-49% native species	<30% native species
Nativeness (abundance)	>90% native biomass	70-89% native biomass	50-69% native biomass	30-49% native biomass	<30% native biomass

2.2.6.2 Species level metrics

At the species level, we focussed on priority non-migratory species outlined in the MERI (Table 4). These non-migratory species exist in isolated populations within the MW management region and are each experiencing population decline. Being non-migratory, their health reflects the habitat condition in the direct vicinity of the study reach. As such we chose to focus on them in this instance. Specifically, we report on species abundance, health (e.g. parasites, fin damage), and evidence of reproduction (i.e. presence of young-of-year fish).

Of the priority species captured, we considered young-of-year fish to be:

- Ornate Galaxias (*Galaxias ornatus*) ≤ 50mm (Hammer and Beitzel 2018)

- River Blackfish (*Gadopsis marmoratus*) ≤ 80mm (Sanger 1986; Hammer 2009)
- Yarra Pygmy Perch (*Nannoperca obscura*) ≤ 35 mm (Close *et al.* 2002; Bice *et al.* 2014)
- Southern Pygmy Perch (*Nannoperca australis*) ≤ 45 mm (Humphries 1995)

Table 4 List of priority non-migratory fish species for monitoring in the MW management region and rationale for their selection (adapted in part from King *et al.* 2020).

Common name	Scientific name	Current conservation status	Rationale
Australian mudfish	<i>Neochanna cleaveri</i>	IUCN: Endangered, unknown FFG: Endangered	Threatened species.
Dwarf Galaxias	<i>Galaxiella pusilla</i>	IUCN: Endangered, decreasing EPBC: Vulnerable FFG: Endangered	Threatened species. Representative of non-migratory riverine life history.
Ornate Galaxias	<i>Galaxias ornatus</i>	IUCN: Least concern, decreasing	Representative of non-migratory riverine life history.
River Blackfish	<i>Gadopsis marmoratus</i>	IUCN: Least concern, decreasing	Representative of non-migratory riverine life history. Risk of climate change impact.
Southern Pygmy Perch	<i>Nannoperca australis</i>	IUCN: Near threatened, decreasing	Representative of non-migratory wetland life history.
Yarra Pygmy Perch	<i>Nannoperca obscura</i>	IUCN: Endangered, decreasing EPBC: Vulnerable FFG: Vulnerable	Threatened species.

3. Results

3.1 Water quality and physical habitat

Water quality and physical habitat measurements taken at each study sites are summarised in Table 5. At all sites conditions were suitable for fish sampling (i.e. fishing was not unduly impacted by high flows, high turbidity or inclement weather) and are considered characteristic at the time of sampling. Given that the MW catchments drain a highly modified urban landscape, it is a given that the sites themselves will reflect such land-use change to a degree. However, comment is made when sites show signs of significant degradation that would be expected to have a significant impact on what species may be able to persist there, and fishing efficiency in general. As the habitat assessment is qualitative rather than quantitative, the high-level observation changes over time outlined below should be treated with caution.

During surveys in 2023, the majority of survey sites showed evidence of the significant high flow event of October 2022, with noticeable erosion, deposition, movement of debris and rocks and scour of vegetation (Jacobs 2024a). During the current surveys, habitat appeared to have stabilised and/or improved compared to 2023 (e.g. increased cover of macrophytes and leaf litter).

Sites within the Werribee catchment were considered typical of the catchment in terms of habitat condition. Habitat quality varied considerably between sites, with the Middle Werribee River supporting relatively poor fish habitat but habitat was relatively good at the gorge sites and the downstream site. All sites had slow to medium flow, and displayed a range of substrate types, in-stream cover, native riparian vegetation, and slow/deep (e.g. pools) to shallow/fast (e.g. riffles) mesohabitat types. Presence of macrophytes and leaf litter tended to increase at sites across the catchment compared to 2023, potentially reflecting recovery following the high flow event in October 2022.

Sites within the Maribyrnong catchment varied in condition. For instance, riparian habitat at Upper Deep Creek (DPW-13586-2) was quite degraded with no riparian trees, and bed sediment dominated by mud and silt. Despite poor riparian habitat, there was abundant emergent, floating and submergent vegetation at this site and it was fenced off from cattle. However, macrophyte cover at this site appeared slightly reduced compared to previous years, potentially due to the abundance of Goldfish (*Carassius auratus*) at this site. The other two sites (Lower Deep Creek [DPW-63085-7] and the Maribyrnong River at Keilor [MRB-130320-2]) exhibited slow to medium flow, and a range of substrate types, in-stream cover, native riparian vegetation, and slow/deep (e.g. pools) to shallow/fast (e.g. riffles) mesohabitat types. Similar to the Werribee catchment, presence of macrophytes and leaf litter tended to increase at sites across the catchment compared to 2023.

Yarra catchment sites had slow to fast flows and were mostly considered typical of the catchment in terms of water quality parameters, riparian vegetation, and the variety of physical habitat available. Similar to other catchments, presence of macrophytes and leaf litter tended to increase at sites across the catchment compared to 2023, as did filamentous algae.

Both of the Dandenong catchment sites were heavily modified. The lower site (DNG-31881-2) was situated in an industrial park, immediately upstream of the Pillars Crossing fishway. The channel itself had been straightened and native riparian vegetation removed. The bed sediment was predominantly mud and silt and sand, but a rock-fishway had been installed at the site which provided cover in the form of large rocks and riffle habitat which was unique to the stream reach. Flow was slow to medium, but there were large backwaters with no flow. The upper catchment site (DNG-13753-1) was a small stream reach (average 2.5 m wide) with a mud and silt base and the riparian zone was a mix of native and exotic tree and grass species. Otherwise, a reasonable amount and diversity of cover and mesohabitats were available. Fish habitat at the Dandenong Creek sites were likely less affected by the Spring 2022 high flow event, and as such there was limited change in habitat values compared to surveys in 2023.

The Western Port catchment region covers a large area and six individual well-separated catchments outlined below. Habitat is quite variable across these catchments, with lower reaches often highly degraded and in

some instances channelised (e.g. Bunyip River, Lang Lang River), whereas upper reaches support much higher quality habitats.

- The Balcombe Creek catchment site (BLC-3709-0) is located in the Briars Wildlife Sanctuary. Habitats included more open slow flowing section of creek through swamp scrub and areas with dense stands of emergent vegetation. The majority of values were similar to 2023, however leaf litter and filamentous algae cover had increased in 2024.
- A new site was surveyed at Lower Cardinia Creek site (CDC-10600-4). This site supports better habitat for Australian Grayling, however macrophyte cover is lower at this site and there are less overhanging banks. Turbidity was also much lower than surveys in 2023. The survey could also be undertaken much more safely at this new site, as the banks were less steep and did not support a dense cover of blackberries, and there were no deep holes in the survey reach. The Upper Cardinia site (CDC-7795-5) supported a much-increased cover of submergent macrophytes and filamentous algae compared to 2023.
- The lower Bunyip River site (BNY-70608-3) is located in a channelised section of river contained within large containment banks. Considerable work has gone into improving riparian vegetation and fish passage through this section of the Bunyip River. Cover of macrophytes appeared to decline in 2024 compared to 2023 at both Bunyip River sites.
- Macrophyte cover at the Tarago River site appeared to substantially improve in 2024 compared to 2023
- The Lang Lang site (LNG-29460-1) is located in a channelised section of river contained within large containment banks. Considerable work has gone into improving riparian vegetation this section of the Lang Lang River. This site is located below the Heads Road weir, which is a barrier to upstream movement for many fish species. Habitat at this site appeared consistent with previous years, however there may have been a reduction in submerged macrophytes compared to 2023. This reduction in macrophytes may just be a result of reduced flows and river level during the current round of surveys, meaning that less riparian vegetation was inundated.
- Finally, The Bass River site (BAS-22307-6) was quite degraded, supporting bed sediments dominated by mud, silt, and clay. The riparian zone was dominated by exotic willows (*Salix* spp.) that were intruding on the stream. Habitat appeared largely consistent with 2023.

Other than these notable exceptions, the sites exhibited water quality parameters that were within an acceptable range, a range of substrate types, in-stream cover, native riparian vegetation, and slow/deep (e.g. pools) to shallow/fast (e.g. riffles) mesohabitat types. Most sites had slow to medium flow, although the upper Bunyip River and Lang Lang River sites were running fast at the time of sampling.

2024 Healthy Waterways Strategy Fish Monitoring

Table 5 Water quality and physical habitat recordings at each study site. Physical habitat observations are presented as the percent of electrofishing shot reaches where they those habitat features were observed (e.g. boulders were present where 4 out of 8 (50%) electrofishing shots were conducted). Velocity is given as a range across the site (Fast = F, Medium = M, Slow = S, or No Flow = NF).

	Werribee River				Maribrnong River			Yarra River							Dandenong Creek		Western Port							
	LER-22832-7	WERRIBEE GORGE	WER-30289-9	WER-138085-6	DPW-13586-2	DPW-63085-7	MRB-130320-2	PLE-16938-4	ART-4232-0	NCC-3576-4	YAR-42313-7	YAR-374049-3	HDL-2685-5	WOY-8964-3	DNG-13753-1	DNG-31881-2	BLC-3709-0	CDC-7795-5	CDC-10600-4	BNY-11161-3	BNY-70608-3	TAR-22224-5	LNG-29460-1	BAS-22307-6
Water Quality																								
Temp. (°C)	11.2	11.1	12.3	12.9	10.5	12.6	11.3	11.7	8.4	8.8	9.4	13.1	8.1	9.2	11.1	12.9	14.5	9.9	11.2	9.2	11.6	12.4	12.9	13
pH	7.68	8.09	7.97	7.88	7.23	7.68	7.91	6.69	7.41	7.25	7.47	7.51	7.18	7.31	7.58	7.57	6.83	7.39	7.48	7.15	7.28	7.61	7.27	7.5
Cond. (µS.cm)	168.9	407	529	1037	532	1029	838	150	359.1	143.3	39.6	229.6	133.7	103.3	339	344.5	587	143.4	203.6	66.9	148.7	214	512	619
Turbid. (NTU)	3.9	4.82	3.72	7.14	5.7	3.6	16.3	12.5	41.3	12.3	2.52	26	13.7	12.8	19	22.6	9.6	12	21	11.9	15.1	15.2	6.35	8.74
DO (mg/L)	7.91	8.83	8.52	8.43	5.47	7.15	8.38	5.93	9.18	9.75	11.24	8.03	10.15	10.01	8.09	8.89	7.22	8.81	9.22	9.73	9.23	9.16	7.3	5.52
DO (%)	72	80.1	79.8	80.4	48.4	66.3	76.9	54.5	78.2	84.1	103.3	76.2	85.1	86.8	73.8	83.5	70.6	77.9	83.7	84.8	84.5	85.2	69.1	52.3
Substrate																								
Bed-rock	0	25	100	62.5	0	12.5	0	0	0	50	50	0	25	0	0	0	0	0	0	0	0	0	0	0
Boulder (>120 mm)	100	100	25	100	0	12.5	62.5	0	0	75	100	100	0	12.5	25	50	0	0	25	0	100	50	62.5	0
Cobble (60-200 mm)	100	100	100	100	0	12.5	100	0	50	75	100	100	87.5	12.5	25	50	0	0	25	0	0	37.5	62.5	12.5
Gravel (2-60 mm)	100	100	100	100	100	100	100	0	50	75	100	100	100	62.5	0	0	0	0	0	100	100	100	62.5	12.5

2024 Healthy Waterways Strategy Fish Monitoring

	Werribee River				Maribyrnong River			Yarra River							Dandenong Creek			Western Port								
Sand (0.6-2 mm)	100	100	100	100	100	100	100	0	100	75	100	100	100	62.5	0	0	0	100	100	100	100	100	100	100	0	
Mud/silt (0.002-0.6 mm)	100	100	100	100	100	100	100	100	100	100	75	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Clay (<0.002 mm)	0	0	0	0	100	100	0	100	100	100	0	0	100	100	100	100	100	100	100	100	100	0	100	0	62.5	100
Plants																										
Native trees	100	100	100	100	100	100	100	100	100	100	100	0	100	100	100	12.5	100	100	100	100	100	100	100	100	100	0
Exotic trees	12.5	0	100	0	0	12.5	50	0	12.5	0	0	100	0	0	0	0	0	0	0	25	0	12.5	0	62.5	100	
Native shrubs	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	50	100
Riparian grass	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Floating macro.	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Emerg macro.	100	100	100	100	100	100	100	100	100	25	100	100	100	100	100	100	100	100	100	62.5	25	100	87.5	100	12.5	
Submerged macro.	0	100	0	50	100	100	25	0	0	25	0	0	100	100	25	0	100	100	100	0	0	0	0	12.5	100	
Filamentous algae	100	100	100	100	100	100	100	0	100	100	37.5	100	100	100	100	100	100	100	100	100	100	0	100	0	100	100
Suspended algae	0	0	0	0	0	0	0	0	0	0	12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Biofilms	100	100	100	100	100	100	100	100	100	100	25	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

2024 Healthy Waterways Strategy Fish Monitoring

	Werribee River				Maribyrnong River				Yarra River						Dandenong Creek			Western Port							
Cover																									
Rock	100	100	100	100	0	12.5	100	0	50	100	87.5	100	100	12.5	12.5	50	0	0	25	12.5	100	12.5	62.5	0	
Timber	100	100	100	100	0	100	100	100	100	100	100	0	100	100	100	0	100	100	100	100	100	100	100	50	100
Undercuts	100	100	100	62.5	0	100	100	0	100	100	87.5	62.5	100	100	75	0	37.5	100	75	100	0	100	50	100	
Leaf litter	100	0	50	100	0	100	100	100	100	100	50	0	100	62.5	0	0	62.5	100	75	0	0	100	75	100	
Macrophytes	100	100	100	100	100	100	100	100	100	62.5	12.5	37.5	100	100	100	100	100	100	62.5	25	100	87.5	100	100	
Mesohabitat																									
Pools	100	37.5	62.5	62.5	100	87.5	75	50	75	75	75	0	100	62.5	75	50	62.5	0	37.5	0	0	0	25	100	
Run	25	87.5	50	37.5	0	100	62.5	87.5	62.5	100	87.5	75	100	100	62.5	50	100	100	87.5	100	100	100	25	100	
Riffle	25	62.5	12.5	25	0	25	50	0	12.5	37.5	12.5	62.5	50	12.5	12.5	50	0	0	25	0	0	12.5	50	0	
Rapid	0	12.5	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	
Backwater	0	12.5	0	37.5	0	0	0	0	0	0	0	0	0	0	0	0	62.5	0	0	0	0	37.5	0	0	
Velocity	NF-S	S-F	S-F	NF-M	NF	S-M	S-F	S	S-M	S-M	S-F	S-F	S-M	S-F	NF-M	NF-M	S	S	S-M	M-F	M	S-F	NF-M	S	
Aver. wetted width (m)	22.5	7.1	12.5	21.6	25	6.5	12.1	6.8	5	3.1	8.8	26.3	3.3	4	6.5	27.5	25.2	4	4.9	6.4	8	7.4	7.8	7.25	
Aver. depth (m)	0.54	0.65	0.45	0.78	0.8	0.5	0.81	0.73	0.8	0.55	0.27	0.83	0.45	0.78	0.91	0.65	0.45	0.5	0.64	0.38	0.5	0.51	0.53	0.8	
Total dist. travel. (m)	280	240	240	200	160	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	250	240	

3.2 Fish communities

3.2.1 Werribee catchment

The survey of the four Werribee catchment sites captured a total of 70 fish from eight species (seven native and one exotic) (Table 6). The most abundant species overall was Common Galaxias (*Galaxias maculatus*; 30 fish), followed by Tupong (*Pseudaphritis urvilli*; 19 fish), Southern Shortfin Eel (*Anguilla australis*; nine fish), Redfin Perch (*Perca fluviatilis*, five fish), River Blackfish (two fish), Ornate Galaxias (two fish), Smelt (*Retropinna semoni*; two fish) and Flathead Gudgeon (*Philypnodon grandiceps*; 1 fish). Flathead Gudgeon was not caught in the Werribee catchment in 2023, but was recorded this year and in 2022. Roach (*Rutilus rutilus*) and Tench (*Tinca tinca*) were caught in 2022 and 2023, but not in the current round of surveys. Eastern Gambusia (*Gambusia holbrooki*) was not detected in 2023 or 2024, but was caught in 2022 at the Lower Werribee site (WER-138085-6).

The lower Werribee River site (WER-138085-6) exhibited the highest nativeness scores based on both richness (100%) and abundance (100%), while the Werribee Gorge site had the lowest in terms of richness (50%), and equal lowest in terms of abundance (67%) along with Middle Werribee (WER-30289-9).

Overall nativeness (in terms of richness and abundance) in the Werribee River in 2024 was higher than the previous two years of surveys, however there was some variability between sites compared to previous years. In particular, nativeness improved significantly at Middle Werribee compared to previous years. However overall catch was significantly lower at this site in 2024 (3 fish total) compared to 2022 (32 fish) and 2023 (175 fish).

In terms of non-diadromous priority species, encouragingly River Blackfish was caught at Werribee Gorge again (two fish) having not been detected in 2023, however abundances were much lower than 2022 (14 fish). As per 2023, River Blackfish were not recorded at Lerderderg Gorge; only a single fish has been recorded at this site, in 2022. Ornate Galaxias was found at Lerderderg Gorge (LER-22832-7; two fish) as in the previous year's sampling, however abundances were lower than 2022 (17 fish) and 2023 (13 fish).

Three diadromous species were also caught in the Werribee River this year, and abundances were often higher than 2023 and lower than in 2022 (Southern Shortfin Eel – 9 individuals in 2024, 7 in 2023 and 19 in 2022; Common Galaxias – 30 individuals in 2024, 19 in 2023 and 67 in 2022). However abundance of Tupong were considerably higher in 2024 compared to previous years (19 individuals in 2024 compared to 6 in 2023 and 2 in 2022).

While not target species, Common Yabby (*Cherax destructor*) was caught at Lerderderg Gorge (two individuals). The Southern Victorian Spiny Crayfish (*Euastacus yarraensis*) was again detected at Werribee Gorge (six individuals) after not being detected in 2023. Fifteen individuals were caught during sampling in 2022.

Table 6 Catch data for Werribee catchment sites. Data are presented as number of individuals caught at each site, with individuals observed but not captured in parentheses. Aggregate metrics are presented for each species and site.

Species Name	Common Name	Site				Total
		LER-22832-7	WERRIBEE GORGE	WER-30289-9	WER-138085-6	
Native Fish						
Southern Shortfin Eel	<i>Anguilla australis</i>			1	8	9
River Blackfish	<i>Gadopsis marmorata</i>		2			2
Ornate Galaxias	<i>Galaxias ornatus</i>	2				2
Common Galaxias	<i>Galaxias maculatus</i>	20(4)		1	5	30
Flathead Gudgeon	<i>Philypnodon grandiceps</i>				1	1
Tupong	<i>Pseudaphritis urvilli</i>				13(6)	19
Smelt	<i>Retropinna semoni</i>	2				2
Exotic Fish						
Redfin Perch	<i>Perca fluviatilis</i>	2 (1)	1	1		5
Native Crustaceans (Non-target species)						
Common Yabby	<i>Cherax destructor</i>	2				2
Victorian Spiny Crayfish	<i>Euastacus yarraensis</i>		6			6
Native fish species richness (TOTAL)		3	1	2	4	7
Exotic fish species richness (TOTAL)		1	1	1	0	1
Native fish species abundance (TOTAL)		28	2	2	33	65
Exotic fish species abundance (TOTAL)		3	1	1	0	5
Nativeness – Richness (%)		75	50	67	100	88
Nativeness – Abundance (%)		90	67	67	100	93

3.2.2 Maribyrnong Catchment

During the survey of the Maribyrnong catchment a total of 225 fish were caught over three sites representing nine species (six native and three exotic) (Table 7). The exotic Eastern Gambusia (180 fish) was by far the most abundant fish, followed by Southern Shortfin Eel (17 fish), Goldfish (9 fish), Southern Pygmy perch (6 fish), Common Galaxias (four fish), Redfin Perch (four fish), Yarra Pygmy Perch (two fish), Flathead Gudgeon (two fish) and Ornate Galaxias (one fish). Ornate Galaxias were detected in the Maribyrnong Catchment for the first time as part of this program, but there are numerous database records from the Catchment. Tupong were not detected during 2023 or 2024 sampling but were in low abundance in 2022. Estuary Perch and Tench, which were detected in 2023, were not recorded this year.

Of concern, the exotic Redfin Perch were recorded in the Maribyrnong Catchment for the first time as part of this program. The species was recorded at Upper Deep Creek (DPW-13586-2) where two small-bodied priority species - Southern Pygmy Perch and Yarra Pygmy Perch – are found. Pygmy Perch are known to be vulnerable to predation by Redfin Perch and predation by exotic predators including Redfin Perch and salmonids is identified as a key threatening process for both species. Eastern Gambusia were also much more abundant this year compared to previous years, this species is known to compete with and exhibit aggressive behaviour towards Pygmy Perch and have been implicated in their decline. Finally Goldfish were also more abundant at this site compared to previous years, cyprinids are known to damage habitat critical to the survival of these species (i.e. dense aquatic vegetation) (Saddler and Hammer 2010; Pearce 2014; TSSC 2021).

Lower Deep Creek (DPW-63085-7) and Maribyrnong River (MRB-130320-2) sites had the highest nativeness scores based on both richness (100%) and abundance (100%), same as the two previous years, while Upper Deep Creek (DPW-13586-2) had the lowest (richness [57%], abundance [9%]). The low nativeness score for abundance at Upper Deep Creek was driven by the high number of Eastern Gambusia caught at the site in 2024.

Upper Deep Creek site also held the non-diadromous two priority species, Southern Pygmy Perch (six fish) and Yarra Pygmy Perch (two fish).

Two diadromous species were captured in 2024 (Common Galaxias and Southern Shortfin Eel), with abundances of Common Galaxias lower than 2023 and Southern Shortfin Eel was higher than both 2022 and 2023. Tupong which was caught in low abundance in 2022 at the Lower Maribyrnong River site (MRB-130320-2, 2 individuals) was not recorded in 2023 or 2024.

No crayfish were caught.

Table 7 Catch data for Maribyrnong catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.

Species Name	Common Name	Site			Total
		DPW-13586-2	DPW-63085-7	MRB-130320-2	
Native Species					
Southern Shortfin Eel	<i>Anguilla australis</i>	8(1)	3	5	17
Common Galaxias	<i>Galaxias maculatus</i>		1(3)		4
Ornate Galaxias	<i>Galaxias ornatus</i>		1		1
Southern Pygmy Perch	<i>Nannoperca australis</i>	6			6
Yarra Pygmy Perch	<i>Nannoperca obscura</i>	2			2
Flathead Gudgeon	<i>Philypnodon grandiceps</i>	1		1	2
Exotic Species					
Goldfish	<i>Carassius auratus</i>	5 (4)			9
Eastern Gambusia	<i>Gambusia holbrooki</i>	169 (11)			180
Redfin Perch	<i>Perca fluviatilis</i>	4			4
Native fish species richness (TOTAL)		4	3	2	6
Exotic fish species richness (TOTAL)		3	0	0	3
Native fish species abundance (TOTAL)		18	8	6	32
Exotic fish species abundance (TOTAL)		193	0	0	193
Nativeness – Richness (%)		57	100	100	67
Nativeness – Abundance (%)		9	100	100	14

3.2.3 Yarra catchment

During the survey of the seven Yarra catchment sites 140 fish were caught representing 11 species (eight native and five exotic) (Table 8). The native Southern Pygmy Perch were the most abundant species (39 fish), followed by Ornate Galaxias (27 fish), River Blackfish (20 fish), Flathead Gudgeon (17 fish), Southern Shortfin Eel (9 fish), Common Galaxias (8 fish), the exotic Roach (eight fish), Brown Trout (*Salmo trutta*, four fish), Redfin Perch (three fish), Yellowfin Goby (*Acanthogobius flavimanus*; two fish), Tupong (one fish), Pouched Lamprey (*Geotria australis*, one fish) and Eastern Gambusia (one fish).

Two native species (Pouched Lamprey and Tupong) were recorded in the Yarra catchment for the first time as part of this program, and it is the first record of Pouched Lamprey in any catchment as part of this program. The Pouched Lamprey finding is notable as the species was recorded at the Upper Yarra site, which may be indicative of improved fish passage in the catchment. Based on database records, it was the first time the species has been caught upstream of Yarra Junction since 1993. Two exotic species (Eastern Gambusia and Roach) were recorded in 2024 that were not recorded in 2023, but had been previously recorded in 2022. No Estuary Perch or Rainbow Trout were recorded in 2024, these species had been previously recorded in 2023. Abundance of Common Galaxias, Ornate Galaxias and Brown Trout were lower compared to previous years, whereas the abundance of other species was largely comparable with previous years.

All sites had a moderate to high score for nativeness by richness (50-80%) and abundance (50-96%). While some sites scored lower than 2023, overall results were comparable to previous years. Lower Yarra at Dights Falls (YAR-374049-3) had the highest score for native richness (80%) and the Plenty River site (PLE-16938-4) had the highest score in terms of native abundance (96%). Diamond Creek (ART-4232-0) and Woori Yallock (WOY-8964-3) had the lowest scores for native richness and abundance (both 50% at both sites).

Regarding non-diadromous priority species, River Blackfish, Ornate Galaxias, and Southern Pygmy Perch were caught in the catchment. River Blackfish were found in very high abundance at Upper Yarra River (YAR-42313-7; 16 fish), and low abundance at Hoddles Creek (HDL-2685-5; two fish), New Chum Creek (NCC-3576-4; one fish) and Woori Yallock Creek (WOY-8964-3; 1 fish). River Blackfish were not recorded in Woori Yallock Creek in 2023. Ornate Galaxias abundance was substantially lower than previous years. In 2024 they were found in New Chum Creek (NCC-3576-4; 16 fish), Hoddles Creek (2 fish) and Plenty River (PLE-16938-4, one fish). It was the first time they were recorded at the Plenty River site as part of this program, but there are database records from the area. Previously Ornate Galaxias have also been recorded at Woori Yallock Creek (2022 and 2023) and Diamond Creek (2023). Southern Pygmy Perch were found at the Plenty River site in good numbers (PLE-16938-4; 49 fish), but not in Diamond Creek (ART-4232-0) where they were detected in 2022 (11 fish). Estuary perch were not detected in the Lower Yarra River site this year, a single fish was recorded at that site in 2023.

Three diadromous species were recorded in the Yarra Catchment in 2024. Southern Shortfin Eel abundance was lower in 2024 (nine individual) compared to 2023 (15 fish), but higher than 2022 (one fish). Common Galaxias were substantial less abundant with eight fish captured in 2024, compared with 53 individuals caught in 2023 and 75 in 2022. During surveys this year, Tupong was recorded in the Yarra Catchment for the first time as part of this program, with one individual caught at Dights Falls in the Lower Yarra. Australian Grayling have not been caught in the Yarra as part of this survey program, but they are not an identified target species. In addition, the majority of survey sites are outside the range of Australian Grayling in the Yarra catchment.

Southern Victorian Spiny Crayfish were caught in New Chum Creek (NCC-3576-4; three crayfish), but not at Hoddles Creek where the species was recorded in 2023. Gippsland Spiny Crayfish (*Euastacus kershawi*) were detected in Upper Yarra River (YAR-42313-7; two crayfish), Hoddles Creek (three crayfish), and Woori Yallock Creek (five crayfish). A further seven Spiny Crayfish were observed at Woori Yallock Creek, it is likely that these were Gippsland Spiny Crayfish.

Table 8 Catch data for Yarra catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.

Species Name	Common Name	Site							Total
		PLE-16938-4	ART-4232-0	NCC-3576-4	YAR-42313-7	YAR-374049-3	HDL-2685-5	WOY-8964-3	
Native fish species									
Southern Shortfin Eel	<i>Anguilla australis</i>		3	1	1	4			9
River Blackfish	<i>Gadopsis marmoratus</i>			1	14(2)		2	1	20
Ornate Galaxias	<i>Galaxias ornatus</i>	1		19(4)			2(1)		27
Common Galaxias	<i>Galaxias maculatus</i>	1				5(1)		1	8
Pouched Lamprey	<i>Geotria australis</i>				1				1
Southern Pygmy Perch	<i>Nannoperca australis</i>	34 (15)							39
Flathead Gudgeon	<i>Philypnodon grandiceps</i>		1			12(4)			17
Tupong	<i>Pseudaphritis urvilli</i>					1			1
Exotic fish species									
Yellowfin Goby	<i>Acanthogobius flavimanus</i>					2			2
Eastern Gambusia	<i>Gambusia holbrooki</i>		1						1
Redfin Perch	<i>Perca fluviatilis</i>	1		1				1	3
Roach	<i>Rutilus rutilus</i>	1	3	3				1	8
Brown Trout	<i>Salmo trutta</i>				2		2		4
Crayfish									
Gippsland Spiny Crayfish	<i>Euastacus kershawi</i>				2		3	5	10

Southern Victorian Spiny Crayfish	<i>Euastacus yarraensis</i>			3					3
Spiny Crayfish spp	<i>Euastacus spp.</i>							(7)	7
Native fish species richness (TOTAL)		3	2	3	3	4	2	2	8
Exotic fish species richness (TOTAL)		2	2	2	1	1	1	2	5
Native fish species abundance (TOTAL)		51	4	25	18	27	5	2	122
Exotic fish species abundance (TOTAL)		2	4	4	2	2	2	2	18
Nativeness – Richness (%)		60	50	60	75	80	67	50	62
Nativeness – Abundance (%)		96	50	86	90	93	72	50	87

3.2.4 Dandenong catchment

The survey of the two Dandenong Creek sites resulted in 256 fish being caught representing seven species (three native and four exotic) (Table 9). The exotic Eastern Gambusia (232 fish) was the most abundant species, followed by the native Southern Shortfin Eel (16 fish), Tupong (three fish), Oriental Weatherloach (*Misgurnus anguillicaudatus*, two fish), Shorthead Lamprey (one fish), Goldfish (one fish) and Redfin Perch (one fish). It is the first time that Shorthead Lamprey have been caught in Dandenong Creek as part of this program. Tupong were recorded again in the catchment after not being recorded in 2023. Two native species (Common Galaxias and Flathead Gudgeon) and were not recorded in 2024 after being recorded in 2022 and 2023. One exotic species (European Carp *Cyprinus carpio*) was not recorded in 2024 after being recorded in 2023.

Dwarf Galaxias, a target species at the Upper Dandenong Creek site, have not been recorded in this catchment as part of this survey program. This is discussed further in Section 4.

All native species caught in Dandenong Creek in 2024 were diadromous species. Southern Shortfin Eel abundance was similar to previous years. Tupong abundance in 2024 was higher than 2022, when a single Tupong was caught. As outlined above, was the first time that Shorthead Lamprey have been caught in Dandenong Creek as part of this program. Common Galaxias were not caught in 2024; abundance was variable in previous years with one individual caught in 2022 and 14 in 2023.

2024 Healthy Waterways Strategy Fish Monitoring

Both sites had relatively low nativeness scores, with Lower Dandenong Creek (DNG-31881-2) scoring the highest on richness (60%) and abundance (81%) compared to the Upper Dandenong Creek (DNG-13753-1) scores of 25% for richness and 1% for abundance. Low nativeness scores for abundance in 2024 at Upper Dandenong Creek was driven by the very high abundance of Eastern Gambusia; this may be at least partially explained by the more intensive dip netting efforts undertaken in 2024 (30 mins) compared to previous years (10 mins).

No priority fish species or crayfish were caught.

Table 9 Catch data for Dandenong catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.

Species Name	Common Name	Site		Total
		DNG-13753-1	DNG-31881-2	
Native Species				
Southern Shortfin Eel	<i>Anguilla australis</i>	3	13	16
Shorthead Lamprey	<i>Mordacia mordax</i>		1	1
Tupong	<i>Pseudaphritis urvilli</i>		2 (1)	3
Exotic species				
Goldfish	<i>Carassius auratus</i>	1		1
Oriental Weatherloach	<i>Misgurnus anguillicaudatus</i>		2	2
Redfin Perch	<i>Perca fluviatilis</i>	1		1
Eastern Gambusia	<i>Gambusia holbrooki</i>	30 (200)	2	232
Native fish species richness (TOTAL)		1	3	3
Exotic fish species richness (TOTAL)		3	2	4
Native fish species abundance (TOTAL)		3	17	20
Exotic fish species abundance (TOTAL)		232	4	236
Nativeness – Richness (%)		25	60	43
Nativeness – Abundance (%)		1	81	8

3.2.5 Western Port catchment region

The survey of the Western Port catchment region included eight sites spread across six individual catchments that drain into Western Port. A total of 175 fish were caught representing 11 species (eight native and three exotic) (Table 10). Tupong (93 fish) was the most abundant species, followed by Southern Shortfin Eel (38 fish), Common Galaxias (17 fish) and Southern Pygmy Perch (13 fish), European Carp (6 fish, exotic), Australian Grayling (2 fish), River Blackfish (2 fish), Shorthead Lamprey (1 fish), Flathead Gudgeon (1 fish), Eastern Gambusia (1 fish, exotic), and Brown Trout (1 fish, exotic).

Dwarf Galaxias, a target species at the Balcombe Creek site, have not been recorded in this catchment as part of this survey program. This is discussed further in Section 4.

Given the above results, it is unsurprising that nativeness scores were typically high across the sites. Balcombe Creek (BLC-3709-0), Lower Cardinia Creek (CDC-10600-4) Lang Lang River (LNG-29460-1) and Bass River (BAS-22307-6) each recorded nativeness scores of 100% for richness and abundance. Lower Bunyip River (BNY-70608-3) scored the lowest based on species richness (67%), while the Tarago River site (TAR-22224-5) scored the lowest based on abundance (86%).

For non-diadromous priority species, River Blackfish and Southern Pygmy Perch were caught in the region. River Blackfish were only caught at the Upper Bunyip River site (BNY-11161-3; two fish), the same as the previous two years. Southern Pygmy Perch were caught at four sites; Balcombe Creek (BLC-3709-0, three fish), Upper Cardinia Creek (CDC-7795-5, two fish), Upper Bunyip River (BNY-11161-3, one fish) and Lower Bunyip River (BNY-70608-3, seven fish). Southern Pygmy Perch were not recorded at Lower Cardinia Creek (CDC-10600-4) where the species was found in 2023, this may be due to the site location changing in 2024. Overall Pygmy Perch abundance in the Westernport Catchment was lower in 2024 (13 fish) compared to 2022 and 2023 (29 fish both years).

Five diadromous species were recorded in the Western Port Region Catchment in 2023. Southern Shortfin Eel abundance in 2024 (38 fish) was half of that recorded in 2022 and 2023 (76 fish both years). This pattern was largely driven by substantial reductions in Southern Shortfin Eel abundance at Lang Lang River (LNG-29460-1) and Bass River (BAS-22307-6) compared to 2022 and 2023. Common Galaxias were much less abundant in 2024 (17 fish) compared to 2022 (71 fish) and 2023 (97 fish). Conversely, Tupong were much more abundant in 2024 (93 fish) compared to 2022 (22 fish) and 2023 (37 fish). Tupong were recorded in Cardinia Creek for the first time as part of this program, with individuals recorded at both the Upper and Lower sites. Australian Grayling was recorded at one site (Tarago River TAR-22224-5), with two individuals recorded. This is the first time the species has been recorded at this site as part of this program. In 2022 and 2023 Australian Grayling have been recorded at the Lang Lang River (LNG-29460-1, eight fish in 2022 and two fish in 2023) and in 2023 at the Lower Bunyip site (BNY-70608-3, 1 fish). Finally, a Shorthead Lamprey was detected at Upper Cardinia Creek (CDC-7795-5) for the first time as part of this program. Two Shorthead Lamprey were recorded at the Lang Lang site in 2023.

Non-target species, the Gippsland Spiny Crayfish were found at Upper Cardinia Creek (one crayfish), Upper Bunyip River (two crayfish), Lower Bunyip River (three crayfish) and Tarago River (two crayfish). No Lowland Burrowing Crayfish (*Engaeus quadrimanus*), or Southern Victorian Spiny Crayfish were caught in 2024.

Table 10 Catch data for Western Port catchment sites. Data are presented as number of individuals caught at each site, and aggregate metrics are presented for each species and site.

Species Name	Common Name	Site								Total
		BLC-3709-0	CDC-7795-5	CDC-10600-4	BNY-11161-3	BNY-70608-3	TAR-22224-5	LNG-29460-1	BAS-22307-6	
Native Species										
Southern Shortfin Eel	<i>Anguilla australis</i>		6	2	1	1(1)	1	15(3)	6(2)	38
River Blackfish	<i>Gadopsis marmoratus</i>				(2)					2
Common Galaxias	<i>Galaxias maculatus</i>	1(3)		3		1(3)	1	5		17
Shorthead Lamprey	<i>Mordacia mordax</i>		1							1
Southern Pygmy Perch	<i>Nannoperca australis</i>	3	2		1	4(3)				13
Flathead Gudgeon	<i>Philypnodon grandiceps</i>			1						1
Australian Grayling	<i>Prototroctes maraena</i>						1(1)			2
Tupong	<i>Pseudaphritis urvilli</i>		5(3)	16(4)	1(2)	10(9)	10(5)	19(9)		93
Non-Native Species										
European Carp	<i>Cyprinus carpio</i>		1			2	2(1)			6
Eastern Gambusia	<i>Gambusia holbrooki</i>					1				1
Redfin Perch	<i>Perca fluviatilis</i>									
Brown Trout	<i>Salmo trutta</i>				(1)					1

2024 Healthy Waterways Strategy Fish Monitoring

Lowland Burrowing Crayfish	<i>Engaeus quadrimanus</i>									
Gippsland Spiny Crayfish	<i>Euastacus kershawi</i>		1		2	3	2			8
Southern Victorian Spiny Crayfish	<i>Euastacus yarraensis</i>									
Native fish species richness (TOTAL)		2	4	4	4	4	4	3	1	8
Exotic fish species richness (TOTAL)		0	1	0	1	2	1	0	0	3
Native fish species abundance (TOTAL)		7	17	26	7	32	19	51	8	167
Exotic fish species abundance (TOTAL)		0	1	0	1	3	3	0	0	8
Nativeness – Richness (%)		100	80	100	80	67	80	100	100	73
Nativeness – Abundance (%)		100	94	100	88	91	86	100	100	95

3.3 Community-level condition

The catchment level fish community condition ratings are summarised in Table 11. Based on the three metrics of community condition presented here, the Western Port and Werribee catchments scored highest with an average score of 4.3 (*High*). Both catchments scored *Very High* for nativeness by abundance, and *High* for species richness and nativeness by species richness. Western Port catchment has consistent scored highly in during this sampling program. The Werribee score is higher than previous years and appears to driven by much lower abundance and diversity of exotic species in 2024 compared to previous years.

The Yarra catchment was the next highest, with an average score of 4.0 (*High*). The catchment scored *High* for species richness, *Moderate* for nativeness by species richness and *Very High* for nativeness by abundance. This result is consistent with previous years.

The Maribyrnong (average score of 2.3) and Dandenong (average score of 2.0) were the lowest scoring catchments, averaging in the *Low* category. The Maribyrnong received a *Moderate* score for species richness and nativeness based on richness, and a *Very Low* score for nativeness based on species abundance. The Dandenong catchment received a *Low* score across all indices. This represents a reduction in condition compared to previous years where they scored *Moderate* on average. In the Maribyrnong, this was largely driven by the high abundance of Eastern Gambusia recorded at Upper Deep Creek site (DPW-13586-2). In the Dandenong Creek catchment this was driven by reductions in abundance and diversity of native species and increases in abundance and diversity of exotic species.

Table 11 Catchment level fish community status ratings. VL = Very Low (red), L = Low (orange), M = Moderate (yellow), H = High (light green), VH = Very High (dark green).

Metric	Maribyrnong			Werribee			Yarra			Dandenong			Western Port		
	22	23	24	22	23	24	22	23	24	22	23	24	22	23	24
Species richness	M	M	M	H	M	H	H	H	VH	M	L	L	M	H	H
Nativeness - species richness	H	M	M	M	M	H	M	M	M	M	M	L	M	M	H
Nativeness - abundance	L	H	VL	H	L	VH	H	VH	H	H	M	L	VH	VH	VH
Average Score	3	3.3	2.3	3.7	2.7	4.3	3.6	4	4	3.3	2.7	2	3.6	4	4.3

3.4 Priority species assessment

In this section we present a number of metrics that can be used to monitor the status of priority non-migratory species over time. As this is the third year of surveys as part of the HWS project, the results of all three years are presented for comparison.

3.4.1 Ornate Galaxias (*Galaxias ornatus*)

The metrics for Ornate Galaxias are presented in Table 12. This species was captured at 25% (1) of the sites within the Werribee catchment (Lerderderg Gorge, LER-22832-7) and the catch per unit effort (CPUE) was 0.03, less than the previous years. The distribution of adult versus young-of-year catch is visually presented in Figure 2. As in 2022 and 2023, only adults were caught at the survey site which, combined with the low CPUE, may indicate a third year in a row of poor juvenile recruitment. In addition, predatory Redfin Perch were detected at the site. That being said, the capture of a two 1+ fish (conservatively estimated to be 50-70 mm), indicates that recruitment is occurring to some degree in the area, but juveniles are difficult to detect, at least

at the survey site. Parasitism was not recorded in 2024 whereas previously rates of parasitism were relatively high at that site.

Ornate Galaxiids were also caught at 43% (three) of the sites within the Yarra catchment. The average CPUE across sites was 0.19, which can be split into 0.01 for young-of-year fish and 0.18 for adults. This marks an overall decrease in CPUE from the previous years, with declines in both young-of-year and adult fish caught.

A single 1+ year old Ornate Galaxias was recorded in the Maribyrnong at the Lower Deep Creek site (DPW-63085-7). This is the first time the species has been recorded in the catchment as part of this survey program.

Table 12 Metrics for monitoring the status of Ornate Galaxias (*Galaxias ornatus*) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing.

Metric	Werribee			Yarra			Maribyrnong		
Year	2022	2023	2024	2022	2023	2024	2022	2023	2024
Sites present (% , number)	25 (1)	25 (1)	25 (1)	43 (3)	57 (4)	43 (3)	0	0	33 (1)
Average Abundance (CPUE)	0.21	0.13	0.03	0.27	0.52	0.19	0	0	0.02
Juvenile recruitment (YOY CPUE)	0.00	0.00	0	0.06	0.27	0.01	0	0	0
Mature fish abundance (mature fish CPUE)	0.21	0.13	0.03	0.21	0.25	0.18	0	0	0.02
Disease/parasite/ abnormality prevalence (%)	47 (Parasite)	30 (Parasite)	0	0	0	0	0	0	0

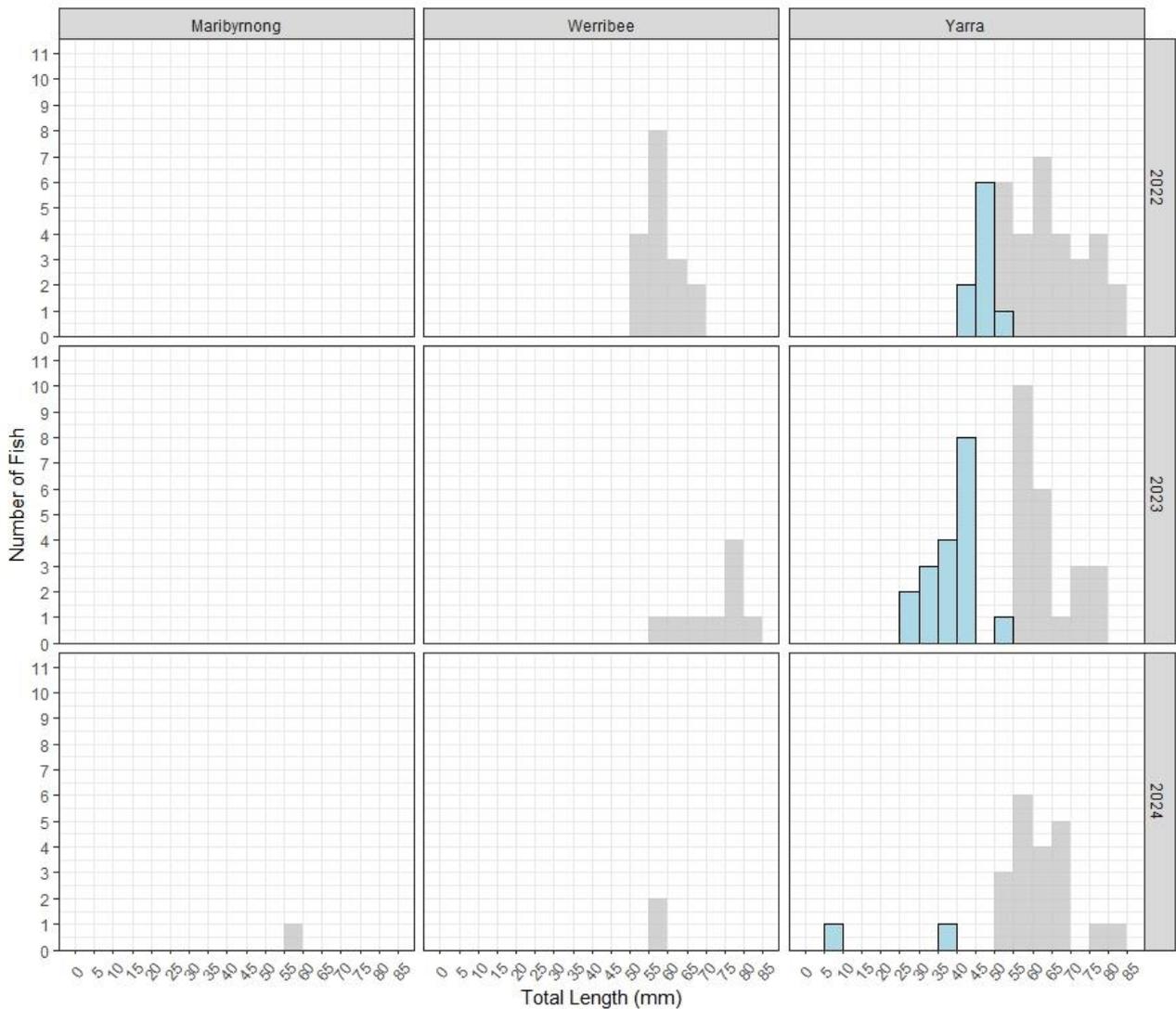


Figure 2 Size class frequency for Ornate Galaxias (*Galaxias ornatus*) in each catchment it was detected in 2022-2024. Young-of-year fish ($\leq 50\text{mm}$) are highlighted in blue. Note that each column represents the number of fish that fall within a particular 5mm size class (e.g. 0-4mm, 5-9mm, 10-14mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls.

3.4.2 River Blackfish (*Gadopsis marmoratus*)

The metrics for River Blackfish are presented in Table 13. River Blackfish were again encountered in the Werribee catchment after not being recorded in 2023, however CPUE was lower than in 2022 and the species was only recorded at a single site (Werribee Gorge).

Within the Yarra catchment the species was caught at 57% (4) of sites, one more site than previous years. The average CPUE was 0.14, which is slightly higher than previous years. The distribution of adult versus young-of-year catch is visually presented in Figure 3. Young-of-year CPUE was 0.05, which is higher than previous years; this may be due to reduced flows in 2024 facilitating improved recruitment compared to the significant flows that occurred in 2022-23. Adult CPUE was 0.08, similar to previous years. Two River Blackfish were observed, but not caught, so they were not included in the adult and young of year CPUE calculations. No Blackfish exhibited fin damage.

2024 Healthy Waterways Strategy Fish Monitoring

Within the Western Port catchment area, the species was caught at one site (12.5% of sites) with the CPUE being 0.01 (two fish caught), the same as previous years. Blackfish were only observed and not captured at the site, hence adult and young of year CPUEs could not be calculated.

Table 13 Metrics for monitoring the status River Blackfish (*Gadopsis marmoratus*) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing. Note that the two River Blackfish in the Westernport Catchment were observed but not captured, as were two Blackfish from the Yarra Catchment, hence their size and age could not be determined.

Metric	Werribee			Yarra			Western Port		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Sites present (% , number)	50 (2)	0	25 (1)	43 (3)	43 (3)	57 (4)	12.5 (1)	12.5 (1)	12.5 (1)
Average Abundance (CPUE)	0.19	0	0.03	0.10	0.11	0.14	0.01	0.01	0.01
Juvenile recruitment (YOY CPUE)	0.09	0	0	0.00	0.01	0.05	0.005	0.005	n/a
Mature fish abundance (mature fish CPUE)	0.10	0	0.03	0.10	0.10	0.08	0.005	0.005	n/a
Disease/parasite/ abnormality prevalence (%)	0	n/a	0	20 (Fin damage)	7 (Fin damage)	0	0	0	n/a

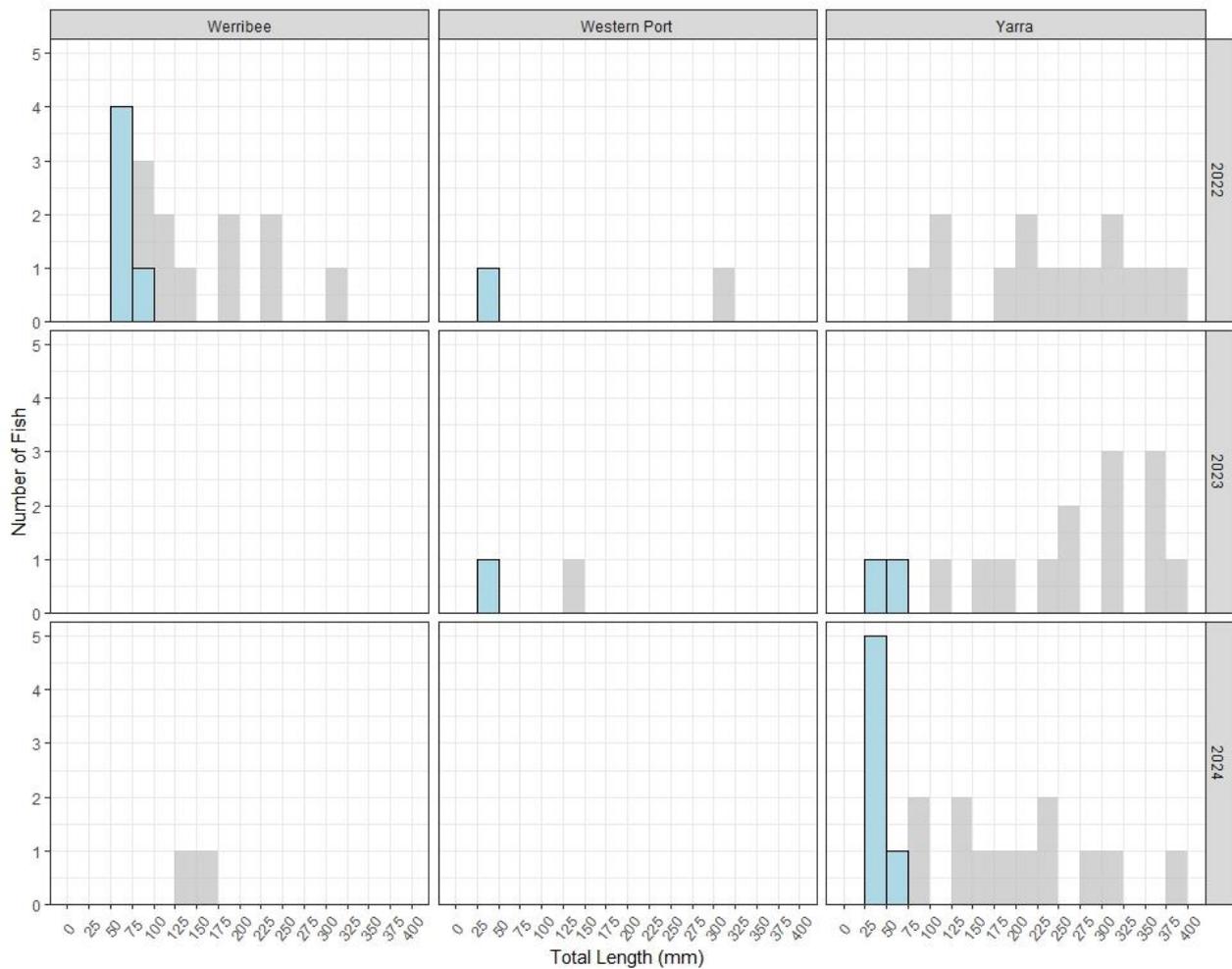


Figure 3 Size class frequency for River Blackfish (*Gadopsis marmoratus*) in each catchment it was detected in 2022, 2023 and 2024. Young of year fish ($\leq 80\text{mm}$) are highlighted in blue. Note that each column represents the number of fish that fall within a particular 25mm size class (e.g. 0-24mm, 25-49mm, 50-74mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls.

3.4.3 Southern Pygmy Perch (*Nannoperca australis*)

The metrics for Southern Pygmy Perch are presented in Table 14. Within the Maribyrnong catchment, the species was captured at one site (33% of all sites) and the CPUE was 0.1. The distribution of adult versus young-of-year catch is visually presented in Figure 4. The CPUE was 0.1 for young-of-year fish, as no adults were caught. These results are broadly in line with the previous years where the populations were skewed towards young of year fish. Fin damage was observed in one fish in 2024

Within the Yarra catchment the species was only caught at one site (14% of all sites). This is one site less than 2022. The average CPUE was 0.23. The catch was made up of predominantly adult fish (CPUE 0.15) with a moderate number of young-of-year fish present (CPUE 0.08). The size distribution of the catch was broadly similar between years.

In Western Port catchment region, the species was caught at 50% (four) of the sites. This is similar to the number of sites they were recorded in 2023, but more than 2022. The average CPUE was 0.06 which was evenly split between young of year and adult fish. Fish caught tended to be smaller than those caught in 2023.

Table 14 Metrics for monitoring the status Southern Pygmy Perch (*Nannoperca australis*) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing.

Metric	Maribyrnong			Yarra			Western Port		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Sites present (% , number)	33 (1)	33 (1)	33 (1)	29 (2)	14 (1)	14 (1)	25 (2)	63 (5)	50 (4)
Average Abundance (CPUE)	0.27	0.17	0.1	0.34	0.15	0.23	0.18	0.19	0.06
Juvenile recruitment (YOY CPUE)	0.25	0.1	0.1	0.16	0.04	0.08	0.06	0.08	0.03
Mature fish abundance (mature fish CPUE)	0.02	0.07	0	0.19	0.11	0.15	0.13	0.11	0.03
Disease/parasite/ abnormality prevalence (%)	31 (Fin damage)	0	17 (Fin damage)	0	0	0	0	0	0

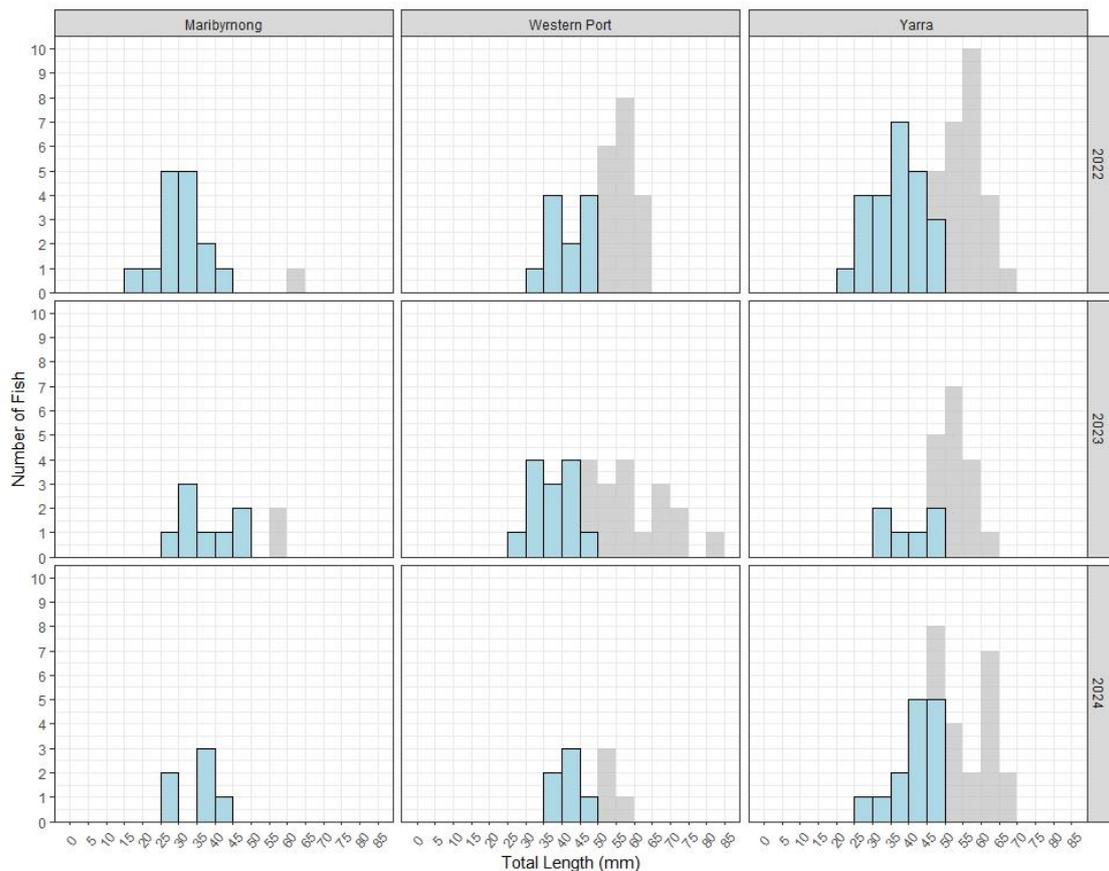


Figure 4 Size class frequency for Southern Pygmy Perch (*Nannoperca australis*) in each catchment it was detected in 2022, 2023 and 2024. Young of year fish (≤ 45 mm) are highlighted in blue. Note that each column represents the number of fish that fall within a particular 5mm size class (e.g. 0-4mm, 5-9mm, 10-14mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls.

3.4.4 Yarra Pygmy Perch (*Nannoperca obscura*)

The metrics for Yarra Pygmy Perch are presented in Table 15. The species was only caught in the Maribyrnong catchment where it was recorded at one site (33% of all sites). The CPUE was 0.03 overall, which is higher than 2022 and lower than 2023. Only adult fish were caught, which is largely consistent with previous years where adults tended to dominate. However in 2023, one young of year was caught. The distribution of adult versus young-of-year catch is visually presented in Figure 5.

Table 15 Metrics for monitoring the status Yarra Pygmy Perch (*Nannoperca obscura*) calculated by sampling year since the beginning of the program. CPUE calculated as fish / 1 minute of electrofishing.

Metric	Maribyrnong		
	2022	2023	2024
Sites present (% , number)	33 (1)	33 (1)	33(1)
Average Abundance (CPUE)	0.02	0.08	0.03
Juvenile recruitment (young-of-year CPUE)	0	0.02	0
Mature (1+) fish abundance (mature fish CPUE)	0.02	0.07	0.03
Disease/parasite/abnormality prevalence (%)	0	0	0

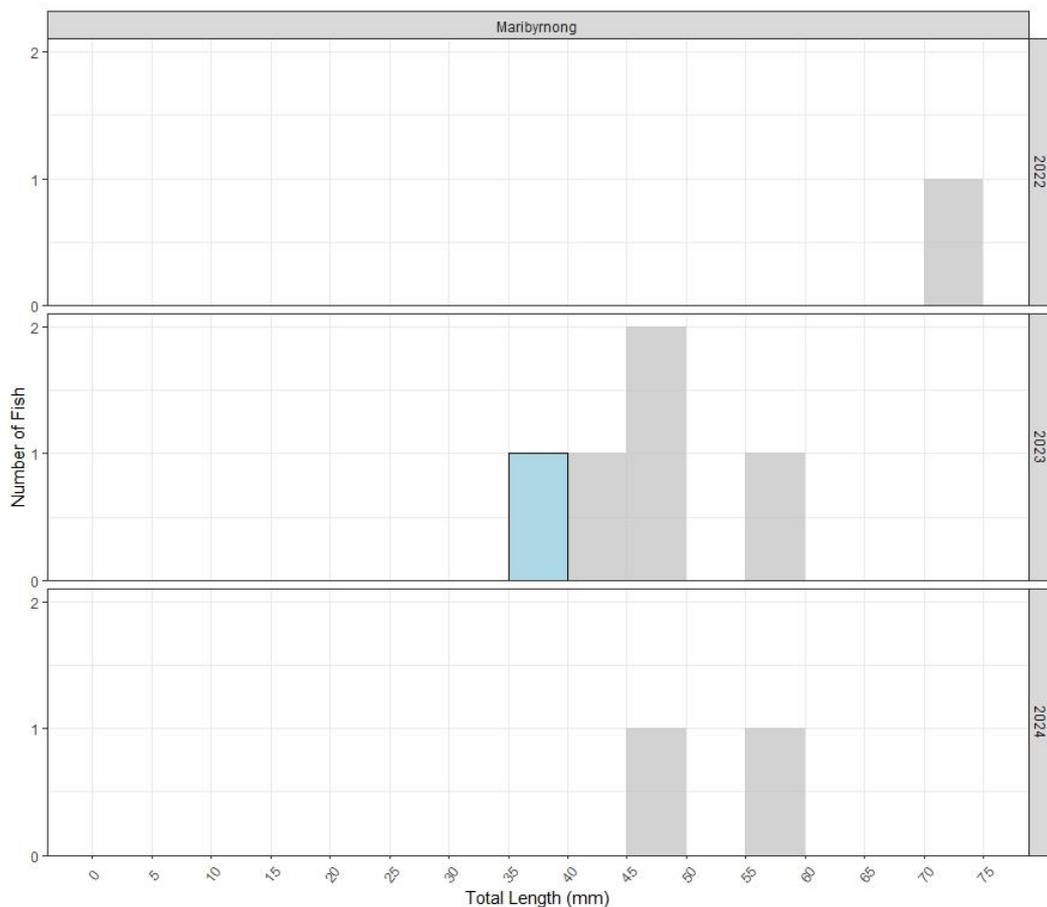


Figure 5 Size class frequency for Yarra Pygmy Perch (*Nannoperca obscura*) in each catchment it was detected in 2022 and 2023. Young of year fish are highlighted in blue. Note that each column represents the number of fish that fall within a particular size class (e.g. 0-4mm, 5-9mm, 10-14mm). As such, both young-of-year and 1+ fish can occur in a single column where their cut-off length falls.

4. Discussion

The aim of the project was to undertake the third year of fish surveys for the HWS and to report the broad findings. The results strengthen the baseline of data that is being built by the strategy and, at this early stage in the monitoring program, provides some cursory insights into the condition of the fish communities within these catchments, and the populations of target species sampled. The data is recorded in such a way that it can be analysed in greater detail in line with the MERI.

A single site was moved in 2024. The Lower Cardinia Creek site was moved approximately 4 km downstream to below the Thompson Road drop structure which represents a substantial barrier to Australian Grayling, which is one of the target species for the site. The original survey site also had a several other constraints due to access onto private land and the presence of deep pools which meant that sections of the site could not be safely surveyed and a full 1200 seconds of electrofishing could not be undertaken on publicly accessible land. The new site selected was known to support the target species, the habitat present is suitable for the target species and could be safely surveyed.

Despite apparent improvements in habitat values over the past 12 months, generally native fish abundance was lower in 2024 (416 fish) compared to previous years (645 fish in 2022 and 610 fish in 2023). Common Galaxias, Ornate Galaxias and Southern Shortfin Eel in particular were much lower in abundance compared to previous years. Conversely, Tupong were much more abundant in 2024 compared to previous years. Changes in abundance may be related to reduced rainfall in the 12 months to May 2024 particularly over late summer and early autumn compared to the wet 12 months preceding both the 2022 and 2023 survey programs.

Eight of the priority riverine species outlined in the MERI were present at one or more of the study sites. These are discussed below:

- Australian Grayling were caught at a single site (Tarago River, two fish) during surveys in 2024, in previous years the species has been caught at the Lang Lang site (eight fish in 2022 and two fish in 2023) and the Lower Bunyip site (one fish in 2023). Australian Grayling were also not caught at the Lower Cardinia Creek site. The species has been recorded at this site recently (Jacobs 2021). This is consistent with the variable nature of local populations of Australian Grayling and variability in the timings of autumn spawning migrations.
Despite deploying fyke nets overnight at the Maribyrnong River site, Grayling were not caught. Overall fish abundance at this site was very low in 2024 and the population of Grayling in the Maribyrnong is thought to be small. It is recommended that fykes be set overnight at this site again in 2024. Australian Grayling have not been caught in the Yarra catchment as part of this program, but it is not an identified target species at any of the sites in the catchment. The majority of survey sites are upstream of the range of Australian Grayling in the Yarra catchment.
- Common Galaxias were recorded at 12 sites during the surveys in 2024, largely consistent with previous years. However abundance of Common Galaxias were much lower in 2024 with 59 fish compared to 239 fish in 2022 and 204 fish in 2023. As outlined above, this may be related to dryer conditions in 2024 compared to 2022 and 2023.
- Ornate Galaxias were recorded in the Maribyrnong River for the first time as part of this program (a single fish was caught at the Lower Deep Creek site), however there are numerous database records from the catchment. The Ornate Galaxias population in the Werribee catchment has continued to decline over the three years of monitoring. In Werribee catchment the species has only been recorded at Lerderderg Gorge as part of this program, and the number caught has declined from 17 in 2022, to 13 in 2023 and finally two in 2024. There have been no young of year caught at that site as part of this program. It was hypothesised that predation by Brown Trout may have driven this decline, particularly following several years of wet conditions that may have led to an increased abundance of Brown Trout (Jacobs 2024a). While no Brown Trout were recorded at the site in 2024, it is concerning that only two Ornate Galaxias were recorded at the site, and no young of year have been recorded over three years of sampling. More widespread sampling in the upper Lerderderg River would help to determine if and where successful

recruitment is taking place and to provide a clearer picture of overall population health. This would allow for early, proactive intervention (e.g. trout removal or trout barrier installation) if needed. These sites could potentially be added during the next year of HWS sampling.

- River Blackfish were recorded at six sites in 2024, largely consistent with previous surveys. The abundance of Blackfish in 2024 (24 fish) was in line with 2022 (35 fish) and 2023 (19 fish). The abundance of young of year River Blackfish was considerably higher in 2024 (7 individuals) than 2022 (no young of year) and 2023 (two young of year). This may be related to reduced flows in the year prior to surveys in 2024 compared to previous years, as River Blackfish recruitment appears to be low in years of high flow (Balcombe *et al.* 2011; Jacobs 2023; Jacobs 2024b). After not being recorded in 2023, River Blackfish were again recorded at Werribee Gorge, with two individuals caught. While this is considerably lower than the 14 individuals caught in May 2022, it is indicative of a level of recovery following the high flow event that occurred in Spring 2022. Unfortunately, no River Blackfish were recorded at Lerderderg Gorge, only a single fish has been recorded in 2022 as part of this program. Habitat at the Lerderderg Gorge survey site is not ideal for River Blackfish, with limited complex habitat. Sites further upstream may provide better habitat for River Blackfish.
- Southern Shortfin Eel were recorded at 18 sites in 2024, similar to previous years. However abundance of Southern Shortfin Eels were lower in 2024 with 89 fish compared to 152 fish in 2022 and 130 fish in 2023.
- Pouched Lamprey was caught at one site (Upper Yarra River). It is the first time this species has been recorded as part of this program. Based on database records, the Pouched Lamprey caught at the Upper Yarra site is the first time the species have been recorded upstream of Yarra Junction since 1993.
- Shorthead Lamprey were recorded at two sites in 2024, with one fish recorded at each site, it is the first time the species has been recorded at either of these sites as part of the current monitoring program. Shorthead Lamprey were recorded at one site in 2023 (Lang Lang River, two fish) and were not recorded in 2022.
- Consistent with previous years, Yarra Pygmy Perch were recorded at a single site (Upper Deep Creek) during the current round of surveys. Two individuals were captured in 2024, which is largely consistent with previous years (one fish in 2022, five fish in 2023). Consistent with previous years, populations appear skewed towards adult fish. Concerningly, the exotic Redfin Perch were recorded for the first time at the Upper Deep Creek site as part of this program. Abundance of Eastern Gambusia was also significantly higher at the site in 2024 (180 fish) compared to 2022 (46) and 2023 (4). Pygmy Perch are known to be vulnerable to predation by Redfin Perch and predation by exotic predators including Redfin Perch and salmonids is identified as a key threatening process for both species of Pygmy Perch. Eastern Gambusia are known to compete with and exhibit aggressive behaviour towards Pygmy Perch and have been implicated in their decline. Finally Goldfish were also more abundant at this site compared to previous years, cyprinids are known to damage habitat critical to the survival of these species (i.e. dense aquatic vegetation) (Saddler and Hammer 2010; Pearce 2014; TSSC 2021).
- Southern Pygmy Perch was recorded at 6 sites in 2024, similar to previous years. Abundance was variable between catchments compared to 2022 and 2023, with lower CPUE in the Maribyrnong and Westernport Catchment, but similar CPUE in the Yarra catchment. Similar to previous years Southern Pygmy Perch from the Yarra and Western Port catchments are relatively evenly spread between young of year and adults, whereas the Maribyrnong is dominated by young of year fish. As outlined above, the increase in abundance of problematic exotic species at the Upper Deep Creek site may be impacting the population at that site.
- Whereas the abundance of many other species declined in 2024 compared to previous years, Tupong abundance was much higher in 2024 (116 fish) compared to 2022 (32 fish) and 2023 (43 fish). This pattern was particularly strong in the Westernport and Werribee catchment. The lower flows in 2024 may have allowed more individuals to travel further into freshwaters compared to the high flow years of 2022 and 2023. Or conversely, due to the relatively high flows in 2022 and 2023 more Tupong may have

responded to flow cues and already migrated downstream into estuarine and marine environments at the time of survey in those years (Crook *et al.* 2010; Webb *et al.* 2016).

Two priority target species were not captured in 2024, nor in 2022 or 2023. These are discussed below.

- Dwarf Galaxias have not been captured over the three years of this survey program. It is a target species at Upper Dandenong Creek and Balcombe Creek, and the species has been recorded in the vicinity of the Lower Cardinia Creek site. This species is likely to be rare in the main channel of creeks as it shows a greater affinity for no and slow flowing wetland habitat (Coleman *et al.* 2018). The Balcombe Creek population inhabits the main channel, however the closest recent record (since 2000) of a wild individual is from near Bungower Road approximately 4.5 km upstream of the current survey site. Due to their habitat preferences, the MERI identifies Dwarf Galaxias as a species that occurs in riverine habitats, but monitoring in riverine habitats is not prioritised. Instead population health surveys will be covered in the Wetlands Monitoring and Evaluation Plan, or other wetland monitoring programs. Additional survey effort (30 minutes of dip netting instead of 10 minutes in previous years) was undertaken at Balcombe Creek and Upper Dandenong Creek in 2024 with no success. It is likely that Dwarf Galaxias are rare in the main channel of Dandenong Creek, and increased survey effort is unlikely to increase the likelihood of encountering this species at that site and other sites along the creek. As outlined in the MERI, monitoring of the Dandenong Creek catchment Dwarf Galaxias population should be undertaken in wetlands. Increased survey effort at the current Balcombe Creek site is unlikely to substantially increase the likelihood of encountering Dwarf Galaxias. To increase the likelihood of encountering Dwarf Galaxias, the Balcombe Creek site could be moved further upstream (i.e. upstream of Bungower Road) or an additional site added.
- Australian Mudfish (*Neochanna cleaveri*) was not detected on the Lower Yarra River below Dights Falls, although it has not been detected there since 1991 despite regular surveys locally. The MERI recommends targeted eDNA surveys for the species to then inform survey for the species.

Other MERI priority species not recorded during the current surveys which are not target species as part of this program are outlined below. They are all estuarine species:

- Estuary Perch were not recorded in 2022 or 2024. However in 2023 the species was recorded at two sites, with one fish recorded at each of the Lower Maribyrnong and Lower Yarra at Dights Falls sites. Within the Melbourne Water region, Estuary Perch are primarily recorded in the estuaries of larger catchments, with occasional records further inland.
- Black Bream (*Acanthopagrus butcheri*) have not been recorded as part of this program. Within the Melbourne Water region, Black Bream are primarily recorded in the estuaries of larger catchments, with occasional records further inland.
- Glass Gobies (*Gobiopterus semivestitus*) have not been recorded as part of this program. Glass gobies are generally found in coastal estuaries, but may enter freshwaters.
- Pale Mangrove Gobies (*Mugilogobius platynotus*) have not been recorded as part of this program. Within the Melbourne Water region, the species is known from mangrove lined estuaries draining into Westernport Bay.

Our analysis of catchment condition, based on species richness and nativeness indices, indicated that on average the MW catchments ranged from *Low* to *Very High* condition. The Werribee catchment fish community was rated as high, an improvement on previous years. The abundance and diversity of exotic species declined compared to previous years (particularly 2023) which led to overall improvements in community condition. River Blackfish were once again recorded in 2024 (two fish) at Werribee Gorge after not being recorded in 2023, this is a sign of recovery following the high flow event in Spring 2022 which badly affected habitat quality at the survey site. Abundance was still much lower than 2022, when 15 fish were caught. Over three years of surveying, only a single River Blackfish has been recorded at Lerderderg Gorge which was caught in 2022. In addition, the Ornate Galaxias population has continued to decline at this site and no young of year have been caught over three years of sampling. Additional surveys in and above

Lerderderg Gorge and Werribee Gorge would give further insight into the distribution and abundance of these poorly known populations of River Blackfish and the Lerderderg River Ornate Galaxias population.

The overall rating of the fish community in the Maribyrnong was low, which is lower than previous years. This was a result of the very low score for "nativeness – abundance" in 2024, which was primarily driven by substantial increases in the abundance of Eastern Gambusia at the Upper Deep Creek Site, but other exotic species were also more abundant at this site compared to previous years. The increases in exotic species diversity and abundance at the Upper Deep Creek site is of concern, as Yarra Pygmy Perch and Southern Pygmy Perch at this site are very vulnerable to predation, competition, aggression and habitat alteration by exotic species. Yarra Pygmy Perch and Southern Pygmy Perch were caught in low abundance in the Maribyrnong catchment in 2024. Australian Grayling was again not caught in the Maribyrnong catchment despite increased survey effort (fyke nets) compared to previous years. The population in the Maribyrnong is thought to be relatively small so the likelihood of catching the species is low. It is recommended that fyke netting continue at the Maribyrnong River site in future years. Australian Grayling are known to undertake long-distance downstream migrations to lower reaches to spawn in mid to late autumn during increased flows, which are then followed by upstream migrations (Koster *et al.* 2013; Dawson and Koster 2018). As a result, the likelihood of catching Grayling at this site in May could be dependent on the timing of autumn flows in a given year.

Condition scores for all indices were low for the Dandenong catchment, which is worse than previous years of monitoring. Abundance of native fish declined while exotic fish increased. The target species Dwarf Galaxias has not been caught in three years of monitoring. As outlined above, this species is primarily wetland specialist, and the population in Dandenong Creek is likely to be small and patchy (both spatially and temporally). As such, it is unlikely that additional sampling effort in Dandenong Creek itself will yield substantially different results. Instead monitoring in wetlands undertaken as part of other studies should be used to monitor this species in other catchments.

The condition of the community in the Yarra catchment remains consistent with previous years, with only slight changes in metrics. River Blackfish were recorded at all sites where they were a target species, and good numbers of young of year were recorded indicating that the population is healthy. While Tupong were only recorded at the Lower Yarra River site at Dights Falls and Pouched Lamprey were caught at Upper Yarra, it is the first time either of these species have been recorded in the Yarra catchment as part of this program. Australian Mudfish have not been recorded as part of this program, this species is very rare in the Melbourne Water region, and more intensive survey effort for this species at the Lower Yarra site is unlikely to substantially increase the likelihood of detection.

Finally, community level metrics improved in the Western Port catchment, with the overall community ranking high with nativeness-species richness improving compared to previous years. These patterns were largely due to an increase in native diversity (nine species) compared to six species in 2022 and eight in 2023. Except for Dwarf Galaxias, all target species were caught in the Western Port catchment but not at all sites where they are a target species.

5. Recommendations

Additional survey effort

- Dwarf Galaxias have not been caught at their two target sites (Balcombe Creek and Upper Dandenong Creek) over the three years of survey at these sites as part of this program. In the main channel of Dandenong Creek the population is likely small with most individuals occasionally using the creek to move between wetlands when conditions are favourable. As such it is unlikely that additional survey effort will substantially increase the likelihood of detection. The current level of survey effort should be maintained at the current site (electrofishing, bait traps and 30 minutes of dip netting), with surveying of the health of Dwarf Galaxias in Dandenong Creek instead reliant on other survey programs (e.g. the wetland MER) targeting wetland habitats. While the main channel of Balcombe Creek is known to support a population of Dwarf Galaxias, the current population appears to be limited to areas upstream of Bungower Road. With the current level of survey effort (electrofishing, bait traps and 30 minutes of dip netting), additional survey effort at the current site is unlikely to increase the likelihood of recording the species. Instead, consideration could be given to moving the current site or adding an additional site to Balcombe Creek upstream of Bungower Road.
- While fyke netting was undertaken at the Maribyrnong River site this year, no Australian Grayling were caught. However overall catch at this site was very low this year and the four fyke nets yielded a total of only two Southern Shortfin Eels. As such it is recommended fyke netting continues next year at this site.
- Additional survey effort (fyke netting) could also be considered to target Australian Grayling at the Lower Yarra Site.

Additional survey sites

- To better target Dwarf Galaxias, the survey site in Balcombe Creek could be moved to known core habitat upstream of Bungower Road, or an additional site added along Balcombe Creek in areas known to support Dwarf Galaxias.
- To better understand the River Blackfish populations in Werribee Gorge and Lerderderg Gorge additional survey sites within and upstream of the gorges should be considered in 2025 so the status of these poorly known and potentially imperilled populations can be better understood. Additional sites in Lerderderg Gorge would also help determine if and where successful Ornate Galaxias recruitment is taking place and to provide a clearer picture of overall population health. This is a necessary step if early intervention is to take place for any of these populations.

6. References

- Balcombe S, Huey J, Masci K (2011). Current status of river blackfish in the upper Condamine River catchment: distribution and genetic structure, final report to the Condamine Alliance. Australian Rivers Institute, Griffith University, Brisbane.
- Bice C, Whiterod N, Zampatti B (2014). The Critical Fish Habitat Project: Assessment of the success of reintroduction of threatened fish species in the Coorong, Lower Lakes and Murray Mouth Region 2011-2014. South Australian Research and Development Institute (Aquatic Sciences), Adelaide.
- Close P, Webb E, Koster W (2002). Rehabilitation of Waurin Ponds Creek, Victoria, for Yarra Pygmy Perch (*Nannoperca obscura*) and Other Native Freshwater Fishes. Arthur Rylah Institute for Environmental Research, Heidelberg, Vic.
- Crook DA, Koster WM, Macdonald JI, Nicol SJ, Belcher CA, Dawson DR, O'Mahony DJ, Lovett D, Walker A, Bannam L (2010). Catadromous migrations by female tupoong (*Pseudaphritis urvillii*) in coastal streams in Victoria, Australia. *Marine and Freshwater Research* **61**, 474. doi:10.1071/MF09170
- Dawson D, Koster W (2018). Habitat use and movements of Australian grayling (*Prototroctes maraena*) in a Victorian coastal stream. *Marine and Freshwater Research* **69**, 1259–1267. doi:10.1071/MF17198
- Hammer M (2009). Freshwater fish monitoring in the Eastern Mount Lofty Ranges: environmental water requirement and tributary condition reporting for 2008 and 2009. Report to the South Australian Murray-Darling Basin Natural Resources Management Board. Aquasave Consultants, Adelaide. Available at: <https://natureglenelg.org.au/wp-content/uploads/2012/02/EMLR-EWR-2009.pdf> [accessed 28 February 2024]
- Hammer M, Beitzel M (2018). Australian Capital Territory region Bush Blitz Fishes and Crayfish. Bush Blitz.
- Humphries P (1995). Life history, food and habitat of southern pygmy perch, *Nannoperca australis*, in the Macquarie River, Tasmania. *Marine and Freshwater Research* **46**, 1159. doi:10.1071/MF9951159
- Jacobs (2022). 2022 Healthy Waterways Strategy Fish Survey. Jacobs, Melbourne.
- Jacobs (2024a). 2023 Healthy Waterways Strategy Fish Survey. Jacobs, Melbourne.
- Jacobs (2021). Officer South Fauna Investigation. Report prepared for Melbourne Water. Jacobs, Melbourne.
- Jacobs (2024b). River Blackfish in Watsons Creek. Jacobs Group (Australia) Pty Limited, Melbourne.
- Jacobs (2023). Upper Yarra ecological surveys: Autumn 2023. Report prepared for Melbourne Water. Jacobs, Melbourne.
- King A, Crook D, Shackleton M, Bond N (2020). MERI for Fish of the Melbourne Water region: A Discussion Paper. Report prepared for Melbourne Water. Centre for Freshwater Ecosystems, La Trobe University, Albury-Wodonga.
- Koster W, Dawson D, Crook D (2013). Downstream spawning migration by the amphidromous Australian grayling (*Prototroctes maraena*) in a coastal river in south-eastern Australia. *Marine and Freshwater Research* **64**, 31–41. doi:10.1071/MF12196
- MDBC (2008). Sustainable Rivers Audit Protocols: Approved manual for Implementation Period 5: 2008-09. Murray-Darling Basin Commission, Canberra.

Pearce L (2014). Conservation management of southern pygmy perch (*Nannoperca australis*) in NSW, in the context of climactic extremes and alien species. MSc Thesis, Charles Sturt University NSW.

Saddler S, Hammer M (2010). National recovery plan for the Yarra Pygmy Perch (*Nannoperca obscura*). Department of Sustainability and Environment, East Melbourne.

Sanger A (1986). The evolution and ecology of the *Gadopsis marmoratus* complex. University of Melbourne Parkville.

SCFFA (1997). 'Australian code of electrofishing practice.' (Standing Committee for Fisheries and Aquaculture, NSW Fisheries: Pyrmont, N.S.W.)

TSSC (2021). Threatened Species Scientific Committee Conservation Advice *Nannoperca australis* Murray-Darling Basin lineage. Department of Agriculture, Water and the Environment, Canberra.

Webb JA, Koster WM, Stuart IG, Reich P, Stewardson MJ (2016). Adaptive management of Australian Grayling recruitment: using bayesian models and surrogate species to assess benefits of spring flows. In ISE 2016.

Appendix A. Field data sheets

dd 18 / 05 / 24
mm 05 / 24
yy

Collector S.L
Helper 1 G.T
Helper 2

Site code ART-4232-0
Waterbody Diamond

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (traised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers, BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, Larval net; Length codes: TL-Total length, LCF-Length to Caudal Fork; Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	RP	1	SFE	1	550	TL	-				
2	BP	4	ROACH	2	49	FL	1				
3		4	"	2	45	FL	1				
4		5	SFE	2	480	TL	-				
5		7	"	3	610	TL	-				
6	RT	9	FHG	1	83	TL	1				
7		9	GAMBO	1	23	TL	1				
8		9	ROACH	1	40	FL	1				
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
18 / 05 / 24

Collector
Helper 1
Helper 2
S.L
G.T

Site code
Waterbody
ART-4232-0
Dinnerd

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gravel (2-60 mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input type="checkbox"/>									
Cover										
Rock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaf litter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mesohabitat										
Pools	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>M.S</u>	<u>S</u>								
Average wetted width (m)	<u>5</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>5</u>	<u>7</u>	<u>7</u>	<u>5</u>	<u>5</u>
Average depth (m)	<u>1</u>	<u>0.9</u>	<u>1</u>	<u>1</u>	<u>0.6</u>	<u>1</u>	<u>0.5</u>	<u>0.5</u>	<u>1</u>	<u>1</u>
Distance travelled (m)	<u>30</u>	<u>30</u>	<u>40</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>20</u>	<u>30</u>	<u>35</u>	<u>35</u>

Collector S.L
 Helper 1 G.T
 Helper 2 _____

Site code CDU-3795-5
 Waterbody CARDIN 1A

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye. IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	TURONG	1	144	TL	29				
2		1	"	2	125	TL	20				
3		1	SFE	1	490	TL	-				
4		2	TURONG	3	136	TL	22				
5		3	SFE	2	295	TL	40				
6		3	S.H. Lamprey	1	98	TL	1				
7		4	TURONG	4	138	TL	24				
8		4	SFE	3	350	TL	-				
9		5	"	4	380	TL	-				
10		5	"	5	400	TL	-				
11		6	SPP	1	43	TL	1				
12		6	CARP	1	201	FL	183				
13		7	E. Kerseyi	1	21	CL	2				
14		7	SFE	6	SD	TL	-				
15		8	TURONG	5	113	TL	9				
16	DIP	10	SPP	1	55	TL	2				
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy 12 / 05 / 24
 Collector J.L
 Helper 1 G.T
 Helper 2 _____

Site code cdc-7995-5
 Waterbody CARDINIA

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input checked="" type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Filamentous algae	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Cover										
Rock	<input type="checkbox"/>									
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Leaf litter	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Mesohabitat										
Pools	<input type="checkbox"/>									
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>3</u>	<u>5</u>								
Average wetted width (m)	<u>4</u>									
Average depth (m)	<u>0.5</u>									
Distance travelled (m)	<u>30</u>									

Collector S-L
 Helper 1 G.T
 Helper 2 _____

Site code CDC-10600-4
 Waterbody CAR DIVERS

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lernaean (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-lanal net, Length codes: TL-Total length, LCF-Length to Caudal Fork, Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	FHC	1	59	TL	-				
2		1	SFE	1	280	TL	2				
3		1	G.Mac	1	176	TL	40				
4		1	TURNOA	2	123	TL	14				
5		1	"	2	128	TL	15				
6		1	"	3	115	TL	16				
7		2	"	4	139	TL	49				
8		2	"	5	127	TL	16				
9		3	"	6	590	TL	-				
10		4	SFE	2	81	TL	3				
11		4	TURNOA	7	131	TL	18				
12		4	"	8	114	TL	12				
13		4	"	9	73	FL	2				
14		4	G.Mac	10	138	TL	25				
15		5	TURNOA	11	115	TL	18				
16		5	"	12	132	TL	25				
17		6	"	13	117	TL	15				
18		6	"	14	89	TL	6				
19		7	G.Mac	3	69	FL	1				
20		7	TURNOA	15	57	TL	2				
21		8	"	16	66	TL	2				
22											
23											
24											
25											

dd mm yy

17 / 05 / 24

Collector

Helper 1
Helper 2

Site code

Waterbody

CDC-10600-4

CARDINIA

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

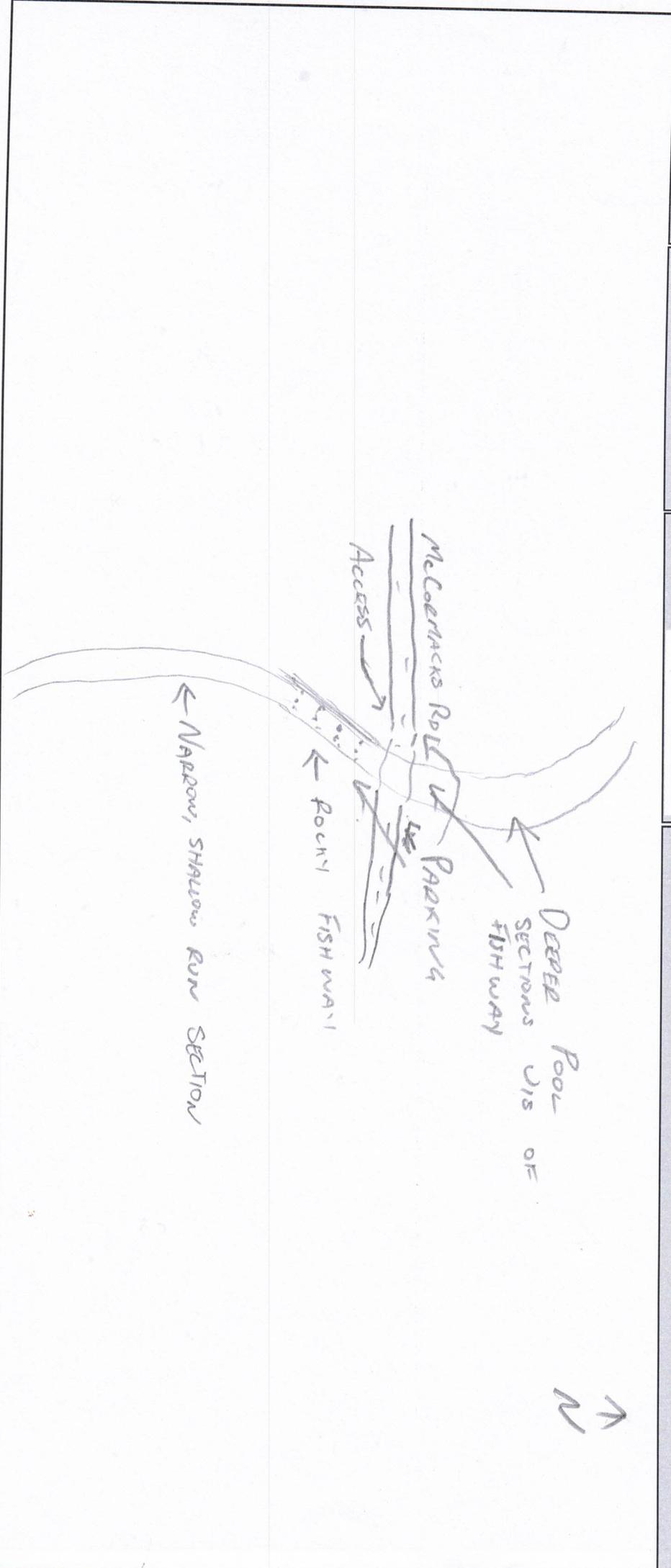
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cobble (60-200 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Cover										
Rock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Leaf litter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Macrophytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mesohabitat										
Pools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Riffle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	3	3	5	M	M	5	5	5	5	
Average wetted width (m)	3	4	4	5	5	6	6	6	6	
Average depth (m)	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.8	
Distance travelled (m)	30	30	30	30	30	30	30	30	30	

dd mm yy
17 / 05 / 24

Drawer S.L

Site code CDC-1060-4
Waterbody CARDINIA

Instructions
Draw picture to help explain location, site details etc., if required or needed.



Comments:

dd mm yy
17 / 05 / 24

Collector S.L
 Helper 1 G.T
 Helper 2 _____

Site code DNC-13753-1
 Waterbody DANDENONG

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net, length codes: TL-Total length, LCF-length to Caudal Fork, Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	Op. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	Kedym	1	146	FL	-				
2		1	SFE	1	720	TL	-				
3		5	SFE	2	870	TL	-				
4		8	SFE	3	690	TL	-				
5	DYP	10	G.FISH	1	26	FL	1				
6	DIP	10	GAMB0	1	18	TL	1				
7				2	25		1				
8				3	22		1				
9				4	28		1				
10				5	26		1				
11				6	31		1				
12				7	29		1				
13				8	30		1				
14				9	27		1				
15				10	21		1				
16				11	16		1				
17				12	18		1				
18				13	12		1				
19				14	20		1				
20				15	22		1				
21				16	26		1				
22				17	25		1				
23				18	20		1				
24				19	27		1				
25				20	19		1				

Collector
 dd mm yy
17 / 05 / 24

Collector
 Helper 1
 Helper 2
 G.T.

Site code
 Waterbody
 DUG-1953-1
 DAVENPORT

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrifishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LCF-Length to Caudal Fork, Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	DIP	10	GAMB	21	25	TL	1				
2				22	25		1				
3				23	24		1				
4				24	25		1				
5				25	15		1				
6				26	13		1				
7				27	16		1				
8				28	27		1				
9				29	32		1				
10				30	34		1				
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
17 / 05 / 21

Collector
Helper 1 S.L
Helper 2 G.T

Site code DUG-13253-1
Waterbody DAN DENON C

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cobble (60-200 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input checked="" type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>									
Riparian grass	<input checked="" type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>									
Submerged macrophytes	<input checked="" type="checkbox"/>									
Filamentous algae	<input checked="" type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>									
Cover										
Rock	<input checked="" type="checkbox"/>									
Timber	<input checked="" type="checkbox"/>									
Undercuts	<input type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input checked="" type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Riffle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>6</u>	<u>6</u>	<u>15</u>	<u>5</u>	<u>5</u>	<u>25</u>	<u>25</u>	<u>3</u>	<u>3</u>	<u>2</u>
Average wetted width (m)	<u>0.5</u>	<u>0.8</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>6</u>	<u>6</u>	<u>0.8</u>	<u>0.8</u>	<u>0.4</u>
Average depth (m)	<u>30</u>	<u>100</u>								
Distance travelled (m)										

BIOLOGICAL RECORD Melbourne Water

dd mm yy
17 / 05 / 24

Collector S.L
 Helper 1 G.T
 Helper 2 _____

Site code DWG-31881-2
 Waterbody DANDENONG

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lesions (only when notable)
 O - Other (e.g. gas bubble eye: IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater-like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LCP-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	SFE	1	470	TL	-				
2		1	"	2	610	TL	-				
3		1	"	3	660	TL	-				
4		1	"	4	780	TL	-				
5		2	"	5	510	TL	-				
6		2	"	6	590	TL	-				
7		2	"	7	600	TL	-				
8		2	"	8	730	TL	-				
9		2	"	9	570	TL	-				
10		3	"	10	1100	TL	-				
11		3	GAMB	1	25	TL	1				
12		S	S.H. Lamprey	1	440	TL	15P				
13		S	TURONS	1	94	TL	5				
14		6	SFE	11	700	TL	-				
15		6	TURONS	2	62	TL	1				
16		7	W. LOACH	1	125	TL	9				
17		7	"	2	163	TL	23				
18		7	GAMB	2	25	TL	1				
19		7	SFE	12	680	TL	-				
20		8	"	13	750	TL	-				
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
17 / 05 / 24

Collector S.L
Helper 1 G.T
Helper 2 _____

Site code DNK-31881-2
Waterbody DANDENONG

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10	
Substrate											
Bedrock	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Boulder (>120 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cobble (60-200 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gravel (2-60 mm)	<input type="checkbox"/>										
Sand (0.6-2 mm)	<input type="checkbox"/>										
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>										
Clay (<0.002 mm)	<input checked="" type="checkbox"/>										
Unknown	<input type="checkbox"/>										
Plants											
Native trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Exotic trees	<input type="checkbox"/>										
Native shrubs	<input type="checkbox"/>										
Riparian grass	<input checked="" type="checkbox"/>										
Floating macrophytes	<input type="checkbox"/>										
Emergent macrophytes	<input checked="" type="checkbox"/>										
Submerged macrophytes	<input type="checkbox"/>										
Filamentous algae	<input checked="" type="checkbox"/>										
Suspended algae	<input type="checkbox"/>										
Biofilms	<input checked="" type="checkbox"/>										
Cover											
Rock	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Timber	<input type="checkbox"/>										
Undercuts	<input type="checkbox"/>										
Leaf litter	<input type="checkbox"/>										
Macrophytes	<input checked="" type="checkbox"/>										
Mesohabitat											
Pools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Run	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Riffle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rapid	<input type="checkbox"/>										
Backwater	<input type="checkbox"/>										
Velocity (F, M, S, NF)	<u>S</u>	<u>S</u>	<u>S,M</u>	<u>S,M</u>	<u>S,M</u>	<u>S,M</u>	<u>NF</u>	<u>NF</u>	<u>NF</u>	<u>NF</u>	
Average wetted width (m)	<u>1</u>	<u>1</u>	<u>30</u>								
Average depth (m)	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.9</u>	<u>1</u>	<u>1</u>	<u>0.5</u>	<u>0.5</u>	
Distance travelled (m)	<u>30</u>	<u>50</u>	<u>30</u>								
Substrate											
Bedrock	<input type="checkbox"/>										
Boulder (>120 mm)	<input type="checkbox"/>										
Cobble (60-200 mm)	<input type="checkbox"/>										
Gravel (2-60 mm)	<input type="checkbox"/>										
Sand (0.6-2 mm)	<input type="checkbox"/>										
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>										
Clay (<0.002 mm)	<input type="checkbox"/>										
Unknown	<input type="checkbox"/>										
Plants											
Native trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Exotic trees	<input type="checkbox"/>										
Native shrubs	<input type="checkbox"/>										
Riparian grass	<input checked="" type="checkbox"/>										
Floating macrophytes	<input type="checkbox"/>										
Emergent macrophytes	<input checked="" type="checkbox"/>										
Submerged macrophytes	<input type="checkbox"/>										
Filamentous algae	<input checked="" type="checkbox"/>										
Suspended algae	<input type="checkbox"/>										
Biofilms	<input checked="" type="checkbox"/>										
Cover											
Rock	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Timber	<input type="checkbox"/>										
Undercuts	<input type="checkbox"/>										
Leaf litter	<input type="checkbox"/>										
Macrophytes	<input checked="" type="checkbox"/>										
Mesohabitat											
Pools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
Run	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Riffle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rapid	<input type="checkbox"/>										
Backwater	<input type="checkbox"/>										
Velocity (F, M, S, NF)	<u>S</u>	<u>S</u>	<u>S,M</u>	<u>S,M</u>	<u>S,M</u>	<u>S,M</u>	<u>NF</u>	<u>NF</u>	<u>NF</u>	<u>NF</u>	
Average width (m)	<u>1</u>	<u>1</u>	<u>30</u>								
Average depth (m)	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.9</u>	<u>1</u>	<u>1</u>	<u>0.5</u>	<u>0.5</u>	
Distance travelled (m)	<u>30</u>	<u>50</u>	<u>30</u>								

dd mm yy
19 / 05 / 24

Collector
 Helper 1 S.L
 Helper 2 S.L

Site code HDL-2685-S
 Waterbody HODDLES

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lemnaea (only when notable)
 O - Other (e.g. gas bubble eye; IMPORTANT!: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	BLACKFISH	1	305	TL	246				
2		4	"	2	335	TL	453				
3		4	F.KEOSHTUN	1	24	CL	1				
4		6	"	2	22	CL	1				
5		7	"	3	18	CL	1				
6		8	G.OWNA	1	59	FL	2				
7		9	"	2	55	FL	1				
8		8	B.TROUT	1	108	FL	15				
9		8	"	2	200	FL	104				
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy 19 / 05 / 24
Collector S.L
Helper 1 S.L
Helper 2

Site code H06-2685-5
Waterbody Hoppers

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gravel (2-60 mm)	<input checked="" type="checkbox"/>									
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Cover										
Rock	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Leaf litter	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Mesohabitat										
Pools	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Velocity (F, M, S, NF)	<u>3</u>	<u>4</u>	<u>5M</u>	<u>3</u>	<u>5M</u>	<u>5M</u>	<u>5M</u>	<u>5M</u>	<u>5</u>	
Average wetted width (m)	<u>0.4</u>	<u>0.5</u>	<u>0.6</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>	<u>0.4</u>	<u>0.4</u>	<u>0.6</u>	
Average depth (m)	<u>0.30</u>	<u>0.50</u>								
Distance travelled (m)										

BIOLOGICAL RECORD Melbourne Water

Collector S.L
 Helper 1 G.T
 Helper 2 _____

Site code NCC-3576-4
 Waterbody New Chum

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Leishmania (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-seine net, P-panel net, F-Fyke net, L-larval net, Length codes: TL-Total length, LCF-Length to Caudal Fork, Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	RP	1	G. ORNA	1	68	FL	4				
2		1	"	2	76	FL	6				
3		1	"	3	68	FL	5				
4		1	"	4	60	FL	3				
5		2	"	5	56	FL	3				
6		2	"	6	64	FL	4				
7		2	"	7	85	FL	12				
8		3	REDFIN	1	276	FL	336				
9		3	G. ORNA	8	54	FL	3				
10		4	"	9	54	FL	3				
11		4	"	10	66	FL	4				
12		5	BLACKFISH	1	420	TL	714				
13		5	G. ORNA	11	62	FL	4				
14		5	SFE	1	680	TL	-				
15		6	G. ORNA	12	56	FL	3				
16		6	"	13	68	FL	5				
17		6	ROACH	1	82	FL	7				
18		7	"	2	87	FL	10				
19		7	"	3	79	FL	6				
20		7	E. YARRA	1	17	CL	1				
21		7	"	2	14	CL	1				
22		7	G. ORNA	14	51	FL	2				
23		7	G. ORNA	15	65	FL	4				
24		8	"	16	61	FL	3				
25		8	"	17	63	FL	4				

dd mm YY
 18 / 05 / 24

Collector
 Helper 1
 Helper 2

S.L.
 G.T.

Site code
 Waterbody

NCC-3576-4
 New Chum

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Leishmania (only when notifiable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack; LB-large boat; MB-medium boat; SB-small boat; Other: BT-bait trap; S-seine net; P-panel net; F-fyke net; L-lanal net; Length codes: TL-Total length; LCF-Length to Caudal Fork; Reproductive Condition: E-eggs discharging; S-sperm discharging; O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	8	G.DRNA	18	55	FL	3				
2		8	"	19	38	FL	1				
3		8	E.YAQA	3	15	CL	1				
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

If Found Return to Waterways & Biodiversity Team, Melbourne Water. Postal address: Melbourne Water, PO Box 4342, Melbourne VIC 3001, Australia. Ph: 1300 555 727. Email: enquiry@melbournewater.com.au

dd mm yy
 18 / 05 / 24

Collector
 Helper 1
 Helper 2

Site code
 Waterbody

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

NCC-3576-4
 NEW CHURN

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boulder (>120 mm)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cobble (60-200 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gravel (2-60 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sand (0.6-2 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Clay (<0.002 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>								
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>	<input type="checkbox"/>								
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Floating macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Emergent macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Filamentous algae	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Suspended algae	<input type="checkbox"/>	<input type="checkbox"/>								
Biofilms	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Cover										
Rock	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Leaf litter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Macrophytes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mesohabitat										
Pools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riffle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rapid	<input type="checkbox"/>	<input type="checkbox"/>								
Backwater	<input type="checkbox"/>	<input type="checkbox"/>								
Velocity (F, M, S, NF)	M	M	M	S	S	3	3	5	3	
Average wetted width (m)	4	3	3	4	3	7	3	3	3	
Average depth (m)	0.4	0.4	0.6	0.6	0.8	0.4	0.4	0.8	0.6	
Distance travelled (m)	30	30	30	30	30	30	30	30	50	

BIOLOGICAL RECORD Melbourne Water

Health Codes (disease, parasite, deformities)

- D - Deformity (skeletal, eye, fins, asymmetric etc.)
- F - Fin condition poor (broken, eroded)
- G - Fungus
- L - Larvae (only when notable)
- O - Other (e.g. gas bubble eye. IMPORTANT: describe and photograph)
- P - Other parasites (leech, lamprey, isopod)
- S - Lesions (raised or reddish skin or scales)
- T - Tumour (localised abnormal growth)
- U - Ulcer (skin is broken, crater like, redness)
- W - Wounds (e.g. bird strikes, hook wounds)

Collector S.L
 Helper 1 G.T
 Helper 2 _____

Site code W07-8964-3
 Waterbody Aborzi Yaluck

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fryke net, L-larval net. Length codes: TL-Total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	E. KERSHAWI	1	19	CL	1				
2		4	"	2	50	CL	30				
3		4	BLACKFISH	1	320	TL	359				
4		5	G. MAC	1	46	FL	1				
5		5	E. KERSHAWI	3	38	CL	12				
6		6	ROACH	1	262	FL	278				
7		6	E. KERSHAWI	4	23	CL	2				
8		8	REDFIN	1	288	FL	360				
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy 18 / 05 / 24
 Collector S.L
 Helper 1 G.T
 Helper 2 _____

Site code W07-8964-5
 Waterbody Lower Yallock

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>									
Riparian grass	<input checked="" type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>									
Submerged macrophytes	<input checked="" type="checkbox"/>									
Filamentous algae	<input checked="" type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input checked="" type="checkbox"/>									
Undercuts	<input checked="" type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input checked="" type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Run	<input checked="" type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>M</u>	<u>M</u>	<u>M/F</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>S</u>
Average wetted width (m)	<u>5</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>5</u>
Average depth (m)	<u>0.8</u>	<u>0.8</u>	<u>0.6</u>	<u>0.8</u>						
Distance travelled (m)	<u>20</u>	<u>20</u>	<u>30</u>	<u>20</u>	<u>30</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>50</u>	<u>50</u>

BIOLOGICAL

Melbourne Water

Collector SL
 Helper 1 SM.B
 Helper 2 _____

Site code YAR-4253-7
 Waterbody Yarra

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lernaea (only when notable)
 O - Other (e.g. Gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-range boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LC-length to Caudal Fork. Reproductive Conditions: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	B.FISH	1	81	TL	8				
2		1	E. Keeshawn	1	21	CL	8				
3		3	B.FISH	2	73	TL	4				
4		4	B. Trout	1	296	FL	292				
5		4	B. FISH	3	46	TL	2				
6		4	"	4	39	TL	2				
7		4	"	5	172	TL	53				
8		5	"	6	146	TL	31				
9		5	"	7	184	TL	64				
10		6	"	8	80	TL	6				
11		6	SFE	1	460	TL	-				
12		7	B.FISH	9	135	TL	26				
13		7	"	10	206	TL	84				
14		7	"	11	229	TL	118				
15		7	"	12	243	TL	154				
16		8	"	13	283	TL	240				
17		8	"	14	350	TL	309				
18		8	SH. Lamprey	1	160	TL	-				
19		8	B. Trout	2	300	FL	303				
20	BT	9	E. Keeshawn	1	12	CL	-				
21											
22											
23											
24											
25											

If Found Return to Waterways & Biodiversity Team, Melbourne Water. Postal address: Melbourne Water, PO Box 4342, Melbourne VIC 3001, Australia. Ph: 1300 555 727. Email: enquiry@melbournewater.com.au

Biological page # (e.g. 1/5) / /

BIOLOGICAL

Melbourne Water

dd mm yy
 _____ / _____ / _____

Collector
 Helper 1 _____
 Helper 2 _____

Site code
 Waterbody YARRA
YARRA

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BF-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Effort/catch pg # (e.g. 1/3) 1 / 1 **EFFORT AND CATCH** Melbourne Water

dd <u>24</u> mm <u>08</u> yy <u>24</u>	Collector <u>SC</u> Helper 1 <u>SM.B</u> Helper 2 _____	Site code <u>-/AR-4233-7</u> Waterbody <u>Yarra</u>	Gear codes Electrofishers: BP – backpack, LB – large boat, MB – medium boat, SB – small boat Other: BT – bait trap, S – seine net, P – panel net, F – fyke net, L – larval net
--	---	--	--

Operation #	Time (24hr)	Date	Method	nets length (m) / start (sec) / mesh (mm) / end (sec)	Volts	amps	% duty cycle (range)	#cght (#obs)									
								1	2	3	4	5	6	7	8	9	10
	14:55:00	24/6/24	BP	0 / 150	30	0.7		1	2	3	4	5	6	7	8	9	10
	15:02:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:08:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:15:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:22:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:29:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:36:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:43:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:50:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	15:57:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:04:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:11:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:18:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:25:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:32:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:39:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:46:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	16:53:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:00:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:07:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:14:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:21:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:28:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:35:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:42:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:49:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	17:56:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:03:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:10:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:17:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:24:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:31:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:38:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:45:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:52:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	18:59:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:06:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:13:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:20:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:27:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:34:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:41:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:48:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	19:55:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:02:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:09:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:16:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:23:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:30:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:37:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:44:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:51:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	20:58:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:05:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:12:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:19:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:26:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:33:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:40:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:47:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	21:54:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:01:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:08:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:15:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:22:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:29:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:36:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:43:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:50:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	22:57:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:04:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:11:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:18:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:25:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:32:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:39:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:46:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	23:53:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10
	24:00:00	24/6/24	BP	0 / 150	30			1	2	3	4	5	6	7	8	9	10

If Found Return to Waterways & Biodiversity Team, Melbourne Water. Postal address: Melbourne Water, PO Box 4342, Melbourne VIC 3001, Australia. Ph: 1300 555 727. Email: enquiry@melbournewater.com.au

Habitat page # (e.g. 1/3)

HABITAT

Melbourne Water

dd mm yy
24 / 6 / 24

Collector
 Helper 1
 Helper 2

Site code
 Waterbody
 YAR-42313-7
 YARRA

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input checked="" type="checkbox"/>									
Boulder (>120 mm)	<input checked="" type="checkbox"/>									
Cobble (60-200 mm)	<input checked="" type="checkbox"/>									
Gravel (2-60 mm)	<input checked="" type="checkbox"/>									
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input checked="" type="checkbox"/>									
Unknown	<input checked="" type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>									
Exotic trees	<input checked="" type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>									
Riparian grass	<input checked="" type="checkbox"/>									
Floating macrophytes	<input checked="" type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>									
Submerged macrophytes	<input checked="" type="checkbox"/>									
Filamentous algae	<input checked="" type="checkbox"/>									
Suspended algae	<input checked="" type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>									
Cover										
Rock	<input checked="" type="checkbox"/>									
Timber	<input checked="" type="checkbox"/>									
Undercuts	<input checked="" type="checkbox"/>									
Leaf litter	<input checked="" type="checkbox"/>									
Macrophytes	<input checked="" type="checkbox"/>									
Mesohabitat										
Pools	<input checked="" type="checkbox"/>									
Run	<input checked="" type="checkbox"/>									
Riffle	<input checked="" type="checkbox"/>									
Rapid	<input checked="" type="checkbox"/>									
Backwater	<input checked="" type="checkbox"/>									
Velocity (F, M, S, NF)	<u>S</u>	<u>M</u>	<u>MF</u>	<u>M</u>	<u>M</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>M</u>
Average wetted width (m)	<u>4</u>	<u>5</u>	<u>7</u>	<u>17</u>	<u>16</u>	<u>30</u>	<u>50</u>	<u>30</u>	<u>15</u>	<u>15</u>
Average depth (m)	<u>30cm</u>	<u>20cm</u>	<u>100cm</u>	<u>15cm</u>	<u>12cm</u>	<u>30cm</u>	<u>250cm</u>	<u>250cm</u>	<u>15cm</u>	<u>15cm</u>
Distance travelled (m)	<u>15</u>									

dd mm yy
10 / 05 / 24

Collector
 Helper 1
 Helper 2

Site code
 Waterbody

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lesions (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, leopod)
 S - Lesions (faded or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)
 Q - Other (describe)

Gear codes: Electrofishers, BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-saline net, P-panel net, L-lanal net, Length codes: TL-total length, ICF-length to Caudal Fork, Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	TURONG	1	122	TL	16				
2		1	"	2	144	TL	27				
3		1	SFE	1	680	TL	-				
4		1	"	2	350	TL	-				
5		1	SFE	3	390	TL	-				
6		2	"	4	540	TL	-				
7		2	"	5	510	TL	-				
8		2	"	6	220	TL	-				
9		2	TURONG	3	128	TL	19				
10		2	"	4	47	TL	6				
11		2	"	5	135	TL	23				
12		2	G.Ms	1	53	TL	2				
13		3	SFE	7	550	TL	464				
14		3	"	8	210	TL	17				
15		3	TURONG	6	116	TL	15				
16		3	"	7	42	TL	5				
17		3	"	8	109	TL	14				
18		4	SFE	4	286	TL	34				
19		4	"	10	960	TL	19				
20		4	G.Ms	2	62	TL	3				
21		4	TURONG	9	144	TL	28				
22		4	"	10	98	TL	10				
23		4	"	11	102	TL	10				
24		4	"	12	123	TL	20				
25	V	5	"	13	126	TL	18				

Biological page # (e.g. 1/5) 2 / 2 **BIOLOGICAL RECORD** Melbourne Water

Collector	5. L	Site code	LM6-09450-1	Health Codes (disease, parasite, deformities) D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Larvae (only when notable) O - Other (e.g. gas bubble eye, IMPROBANT: describe and photograph) P - Other parasites (leech, lamprey, leopold) S - Lesions (raised or reddish skin or scales) T - Tumour (localized abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)
Helper 1	G. T	Waterbody	LAVIC Lavca	
Helper 2				

Gear codes: Electrofisher; Bp-Backpack; 18-hinge boat; Mb-medium boat; Sp-small boat; Other B-trait trap; S-sieve net; P-panel net; F-fine net; L-larval net; Length codes: TL-total length, ICF-length to caudal fin; Reproductive Condition: E-eggs discharged; S-sperm discharged; O-other (describe)

Seq. #	Gear type	Op. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	5	SFE	11	221	TL	32				
2		5	SFE	12	110	TL	4				
3		6	TURORA	14	105	TL	14				
4		6	"	15	104	TL	13				
5		6	"	16	103	TL	14				
6		7	"	12	126	TL	18				
7		7	SFE	13	SFE	TL	-				
8		7	"	14	840	TL	-				
9		8	TURORA	18	160	TL	39				
10		8	"	19	142	TL	80				
11		8	SFE	15	290	TL	-				
12	BT	9	CMAC	3	69	TL	6				
13		9	"	4	69	TL	6				
14		9	"	5	58	TL	3				
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3)

1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
10 / 05 / 24

Collector
Helper 1
Helper 2

G.T
G.T

Site code
Waterbody

LV6-29460-1
Long Long

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate	Bedrock									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>									
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							

BIOLOGICAL RECORD Melbourne Water

dd mm yy
10 / 05 / 24

Collector
Helper 1 S.L.
Helper 2 G.T.

Site code
Waterbody
RLC-S7091-0
Balsmore

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lesions (only when noticable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (peised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishing: BP-backpack; LB-large boat; MB-medium boat; SB-small boat; Other: BT-bait trap; S-saline net; P-panel net; F-flyke net; L-larval net; Length codes: TL-total length; LCF-length to Caudal Fork; Reproductive Condition: E-eggs discharging; S-sperm discharging; O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	G.Mac	1	93	FL	6				
2	BP	6	SPP	1	39	TL	3				
3	BP	7	SPP	2	52	TL	4				
4	DIP	10	SPP	21	46	TL	3				
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

If Found Return to Waterways & Biodiversity Team, Melbourne Water, Postal address: Melbourne Water, PO Box 4342, Melbourne VIC 3001, Australia. Ph: 1300 555 727. Email: enquiry@melbournewater.com.au

Habitat page # (e.g. 1/3)

1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
10 / 05 / 24

Collector
Helper 1
Helper 2

S-L
G.7

Site code
Waterbody

BLC-3709.0
BALCOMBE

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate	Bedrock									
	Boulder (>120 mm)									
	Cobble (60-200 mm)									
	Gravel (2-60 mm)									
	Sand (0.6-2 mm)									
	Mid/silt (0.002-0.6 mm)									
	Clay (<0.002 mm)									
	Unknown									
Plants										
	Native trees									
	Exotic trees									
	Native shrubs									
	Riparian grass									
	Floating macrophytes									
	Emergent macrophytes									
	Submerged macrophytes									
	Filamentous algae									
	Suspended algae									
	Biofilms									
Cover										
	Rock									
	Timber									
	Undercuts									
	Leaf litter									
	Macrophytes									
Mesohabitat										
	Pools									
	Run									
	Riffle									
	Rapid									
	Backwater									
	Velocity (F, M, S, NF)									
	Average wetted width (m)									
	Average depth (m)									
	Distance travelled (m)									

dd 10 / 05 / 24
mm 10 / 05 / 24
yy 24

Collector S.L.
Helper 1 G.T.
Helper 2

Site code RAS-2253-6
Waterbody Bass River

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lernaes (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, lepid)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electro-fishers; BP-backpack; LB-large boat; MB-medium boat; SB-small boat; Other: BT-bait trap; S-sine net; P-panel net; Flyke net; L-larval net; Length codes: TL-total length; LCF-length to caudal fork; Reproductive Condition: E-eggs discharging; S-sperm discharging; O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	4	SFL	1	530	TL	-				
2		4	"	2	210	TL	-				
3		4	"	3	486	TL	-				
4		5	"	4	274	TL	-				
5		6	"	5	360	TL	104				
6		8	"	6	610	TL	-				
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Effort/catch pg # (e.g. 1/3) 1 / 1

EFFORT AND CATCH RECORD Melbourne Water

dd mm yy
10 / 05 / 24

Collector
Helper 1
Helper 2
S.L
G.T

Site code
Waterbody
BAS-22309-6
SASS RIVER

Gear codes
Electrofishers: BP – backpack, LB – large boat, MB – medium boat, SB – small boat
Other: BT – bait trap, S – seine net, P – panel net, F – fyke net, L – larval net

Operation #	Start Time (24hr)	End Time (24hr)	Date (dd/mm/yy)	Method	nets length (m) / start (sec)	mesh (mm) / end (sec)	Volts	pulses per sec	% duty cycle (range)	amps	Species Code	#cght (#obs)								
1	06:40:00	08:40:00	10/5/24	BP	0	150	110	30	12	2.4	No FISH	(1)								
2	08:40:00	09:40:00	10/5/24	BP	150	300														
3	09:40:00	09:50:00	10/5/24	BP	450	450														
4	09:02:00	09:10:00	10/5/24	BP	450	600						3								
5	09:10:00	09:19:00	10/5/24	BP	600	750						(1)								
6	09:19:00	09:25:00	10/5/24	BP	750	900														
7	09:25:00	09:32:00	10/5/24	BP	900	1050														
8	09:32:00	09:40:00	10/5/24	BP	1050	1200														
9	09:40:00	09:50:00	10/5/24	BT	1200															
10																				

If Found Return to Waterways & Biodiversity Team, Melbourne Water, Postal address: Melbourne Water, PO Box 4342, Melbourne VIC 3001, Australia. Ph: 1300 555 727. Email: enquiry@melbournewater.com.au

Habitat page # (e.g. 1/3)

1 / 1

HABITAT RECORD Melbourne Water

dd mm yy

10 / 05 / 24

Collector
Helper 1
Helper 2

0.6
4.7

Site code
Waterbody

BASE 20202-6
BASE RIVER

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input type="checkbox"/>									
Riparian grass	<input type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input type="checkbox"/>									
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input type="checkbox"/>									
Undercuts	<input type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>									
Run	<input type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	8	8	8	8	8	6	6	7	5	5
Average wetted width (m)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Average depth (m)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Distance travelled (m)	20	20	20	20	20	20	20	20	20	20

BIOLOGICAL RECORD Melbourne Water

dd mm yy
09 / 05 / 24

Collector
 Helper 1 J.L
 Helper 2 C.T

Site code TAR-20224-5
 Waterbody TARCO

Health Codes (disease, parasite, deformities)

D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lernaemia (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-slime net, P-panel net, F-flye net, L-larval net, Length codes: TL-Total length, LCF-length to Caudal Fork, Reproductive Conditions: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	Tupoua	1	166	TL	35				
2	BP	1	"	2	174	TL	49				
3	BP	2	"	3	162	TL	45				
4	BP	3	G.Mac	1	135	TL	20				
5		3	E.KEESHAM	1	43	CL	24				
6		3	"	2	22	CL	10				
7		4	Geelong	1	194	FL	81				
8		4	Tupoua	4	172	TL	46				
9		4	"	5	161	TL	39				
10		5	"	6	160	TL	35				
11		5	SFE	1	261	TL	24				
12		6	Tupoua	7	116	TL	13				
13		6	"	8	195	TL	66				
14		7	"	9	82	TL	9				
15		7	CARP	1	340	FL	902				
16		7	CARP	2	405	FL	1173				
17		8	Tupoua	10	225	TL	108				
18											
19											
20											
21											
22											
23											
24											
25											

If Found Return to Waterways & Biodiversity Team, Melbourne Water. Postal address: Melbourne Water, PO Box 4342, Melbourne VIC 3001, Australia. Ph: 1300 555 727. Email: enquiry@melbournewater.com.au

Habitat page # (e.g. 1/3)

1 / 1

HABITAT RECORD Melbourne Water

dd mm YY

09 / 05 / 24

Collector

Helper 1

Helper 2

Site code

0.5
C.T

Waterbody

PAR-2024-5
TARAPO

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>	<input type="checkbox"/>								
Boulder (>120 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cobble (60-200 mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Gravel (2-60 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Clay (<0.002 mm)	<input type="checkbox"/>	<input type="checkbox"/>								
Unknown	<input type="checkbox"/>	<input type="checkbox"/>								
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>	<input type="checkbox"/>								
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Floating macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Emergent macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Filamentous algae	<input type="checkbox"/>	<input type="checkbox"/>								
Suspended algae	<input type="checkbox"/>	<input type="checkbox"/>								
Biofilms	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Cover										
Rock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Leaf litter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Macrophytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mesohabitat										
Pools	<input type="checkbox"/>	<input type="checkbox"/>								
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riffle	<input type="checkbox"/>	<input type="checkbox"/>								
Rapid	<input type="checkbox"/>	<input type="checkbox"/>								
Backwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Velocity (F, M, S, NF)	<u>M</u>	<u>M</u>	<u>S</u>	<u>M</u>	<u>S</u>	<u>M</u>	<u>F,M</u>	<u>S,M</u>	<u>S,M</u>	
Average wetted width (m)	<u>7</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>8</u>	<u>8</u>	<u>7</u>	<u>6</u>	<u>7</u>	
Average depth (m)	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.4</u>	<u>0.6</u>	<u>0.7</u>	<u>0.5</u>	<u>0.4</u>	<u>0.5</u>	
Distance travelled (m)	<u>30</u>	<u>36</u>	<u>30</u>							

dd mm yy
09 / 05 / 24

Collector
Helper 1
Helper 2

J. L
G. T

Site code
Waterbody

BWA-11161-3
Upper Buntip

Health Codes (disease, parasite, deformities)

D - Deformity (sketch), eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lernaee (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

P - Other parasites (leach, lamprey, isopod)
 S - Lesions (redness or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack; LB-large boat; MB-medium boat; SB-small boat; Other: BT-bait trap; S-seine net; P-panel net; Flyke net; L-larval net; Length codes: TL-Total length; CF-Length to Caudal Fork; Reproductive Condition: E-eggs discharging; S-sperm discharging; O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	TURNO	1	141	TL	24				
2	BP	1	SPP	1	51	TL	5				
3	BP	1	E.KESSHAWI	1	13	CL	1				
4	BP	7	E.KESSHAWI	2	26	CL	6				
5	RP	7	SFE	1	473	TL	267				
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3)

_____ / _____

HABITAT RECORD Melbourne Water

dd mm yy

09 / 05 / 24

Collector
Helper 1
Helper 2

S.L.
G.T.

Site code
Waterbody

BV-1161-3
Upper Bowyo

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
<u>Substrate</u>										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input checked="" type="checkbox"/>									
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
<u>Plants</u>										
Native trees	<input checked="" type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>									
Riparian grass	<input checked="" type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>									
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>									
<u>Cover</u>										
Rock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber	<input checked="" type="checkbox"/>									
Undercuts	<input checked="" type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Mesohabitat</u>										
Pools	<input type="checkbox"/>									
Run	<input checked="" type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>FM</u>	<u>M</u>								
Average wetted width (m)	<u>6</u>	<u>8</u>	<u>7</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>7</u>
Average depth (m)	<u>0.6</u>	<u>0.6</u>	<u>0.4</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.6</u>	<u>0.6</u>
Distance travelled (m)	<u>30</u>	<u>50</u>	<u>50</u>							

dd mm yy
09 / 05 / 04

Collector
Helper 1
Helper 2

S. C.
G. T.

Site code
Waterbody
MWT-30608-3
Upper Burryip
Lower

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye, IMFLORANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrotrawlers; BP-backpack; LB-large boat; MB-medium boat; SB-small boat; Other: BT-bait trap; S-saline net; P-panel net; F-fyke net; L-larval net; Length codes: TL-total length; LCF-length to caudal fork; Reproductive Condition: E-eggs discharging; S-sperm discharging; O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	TUPONG	1	145	TL	22				
2	BP	1	"	2	132	TL	24				
3		2	"	3	139	TL	24				
4		2	E.KEKESHAU	1	21	CL	4				
5		3	TUPONG	4	106	TL	9				
6		3	"	5	136	TL	21				
7		3	SPP	1	41	TL	4				
8		3	SPP	2	39	TL	4				
9		3	SFE	1	400	TL	-				
10		4	GAMBUSIA	1	31	TL	1				
11		4	TUPONG	6	65	TL	2				
12		4	SPP	3	42	TL	3				
13		4	E.KEKESHAU	2	43	CL	22				
14		5	TUPONG	7	63	TL	3				
15		5	"	8	129	TL	23	L			
16		6	CARP	1	330	FL	899				
17		7	G. Mac	1	54	TL	3				
18		7	SPP	4	51	TL	5				
19		7	TUPONG	9	142	TL	25				
20		8	TUPONG	10	59	TL	3				
21		8	E.KEKESHAU	3	22	CL	4				
22		8	CARP	2	510	TL	2321				
23											
24											
25											

Habitat page # (e.g. 1/3)

1 / 1

HABITAT RECORD Melbourne Water

dd mm yy

09 / 05 / 24

Collector

Helper 1

S.L

G.T

Site code

Waterbody

BW7-70608-3

LOWER BUNDIP

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen. Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate	Bedrock									
	Boulder (>120 mm)									
	Cobble (60-200 mm)									
	Gravel (2-60 mm)									
	Sand (0.6-2 mm)									
	Mid/silt (0.002-0.6 mm)									
	Clay (<0.002 mm)									
	Unknown									
Plants										
	Native trees									
	Exotic trees									
	Native shrubs									
	Riparian grass									
	Floating macrophytes									
	Emergent macrophytes									
	Submerged macrophytes									
	Filamentous algae									
	Suspended algae									
	Biofilms									
Cover										
	Rock									
	Timber									
	Undercuts									
	Leaf litter									
	Macrophytes									
Mesohabitat										
	Pools									
	Run									
	Riffle									
	Rapid									
	Backwater									
	Velocity (F, M, S, NF)									
	Average wetted width (m)									
	Average depth (m)									
	Distance travelled (m)									

dd 14 mm 05 YY 24

Collector S.L
 Helper 1 M.L.F
 Helper 2 _____

Site code PLC-16937.4
 Waterbody PLENTY

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	SPP	1	63	TL	3				
2		1	"	2	52	TL	1				
3		1	"	3	66	TL	3				
4		1	"	4	54	TL	1				
5		1	Redfin	1	132	FL	29				
6		2	SPP	5	63	TL	3				
7		2	"	6	56	TL	1				
8		2	"	7	54	TL	1				
9		2	"	8	48	TL	1				
10		2	"	9	60	TL	2				
11		3	"	10	60	TL	2				
12		3	"	11	82	TL	2				
13		3	"	12	48	TL	1				
14		3	"	13	42	TL	1				
15		4	"	14	59	TL	2				
16		4	"	15	51	TL	1				
17		4	"	16	44	TL	1				
18		4	"	17	25	TL	1				
19		4	G. Mac	1	105	TL	8				
20		5	Roach	1	70	FL	3				
21		5	SPP	8	46	TL	1				
22		5	"	19	39	TL	1				
23		5	"	20	38	TL	1				
24		5	"	21	60	TL	2				
25		5	"	21	61	TL	2				

Biological page # (e.g. 1/5) 2 / 2

BIOLOGICAL RECORD Melbourne Water

dd mm yy <u>14 / 05 / 24</u>	Collector Helper 1 Helper 2	<u>S.L</u> <u>M.L.F</u>	Site code Waterbody	<u>PLE-16938-4</u> <u>PLENTY</u>	Health Codes (disease, parasite, deformities)
<p>Health Codes (disease, parasite, deformities)</p> <p>D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Leishia (only when notable) O - Other (e.g. gas bubble eye, INFORTAAT: describe and photograph)</p> <p>P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)</p>					

Gear codes: Electrofishing: GP-backpack, LB-large boat, MB-medium boat, SP-small boat; Other: BT-bait trap, Scoop net, P-trawl net, F-Wye net, Lateral net; Length codes: TL-total length, LCF-length to caudal fork; Reproductive condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	ISP	6	SPP	23	41	TL	1				
2		6	"	24	42	TL	1				
3		6	"	25	45	TL	1				
4		7	"	26	45	TL	1				
5		7	"	27	47	TL	1				
6		7	"	28	47	TL	1				
7		7	"	29	34	TL	1				
8		8	"	30	40	TL	1				
9	BT	9	SPP	1	49	TL	1				
10		9	G. Deira	1	55	TL	1				
11	↓	9	SPP	2	67	TL	3				
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

dd 14 mm 05 YY 24
 Collector J.L
 Helper 1 M.L.F
 Helper 2 _____
 Site code PLE-16938-4
 Waterbody PENTRY

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate	Bedrock									
	Boulder (>120 mm)									
	Cobble (60-200 mm)									
	Gravel (2-60 mm)									
	Sand (0.6-2 mm)									
	Mid/silt (0.002-0.6 mm)									
	Clay (<0.002 mm)									
	Unknown									
Plants										
	Native trees									
	Exotic trees									
	Native shrubs									
	Riparian grass									
	Floating macrophytes									
	Emergent macrophytes									
	Submerged macrophytes									
	Filamentous algae									
	Suspended algae									
	Biofilms									
Cover										
	Rock									
	Timber									
	Undercuts									
	Leaf litter									
	Macrophytes									
Mesohabitat										
	Pools									
	Run									
	Riffle									
	Rapid									
	Backwater									
	Velocity (F, M, S, NF)									
	Average wetted width (m)									
	Average depth (m)									
	Distance travelled (m)									

dd <u>14</u> mm <u>05</u> YY <u>24</u>	Collector <u>S.L</u> Helper 1 <u>M.L.F</u> Helper 2	Site code <u>DPW-13586-2</u> Waterbody <u>DEEP CREEK</u>	Health Codes (disease, parasite, deformities) D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Lernaea (only when notable) O - Other (e.g. gas bubble eye. IMPORTANT: describe and photograph)	P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)
--	---	---	--	---

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-lanal net. Length codes: TL-total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	SFE	1	680	TL	-				
2		1	SFE	2	590	TL	-				
3		1	SFE	3	410	TL	-				
4		1	Gambusia	1	29	TL	1				
5		1	"	2	24	TL	1				
6		2	YPP	1	58	TL	2				
7		2	Gambusia	3	23	TL	1				
8		2	"	4	22	TL	1				
9		2	"	5	31	TL	1				
10		2	SFE	4	550	TL	-				
11		3	YPP	2	46	TL	41				
12		3	Redfin	1	281	FL	401				
13		3	Gambusia	6	23	TL	1				
14		3	"	7	30	TL	1				
15		3	"	8	22	TL	1				
16		4	Goldfish	1	181	FL	148				
17		4	"	2	192	FL	185				
18		4	"	3	233	FL	310				
19		4	"	4	172	FL	123				
20		4	"	5	212	FL	229				
21		4	Gambusia	9	22	TL	1				
22		4	"	10	31	TL	1				
23		5	"	11	24	TL	1				
24		5	"	12	27	TL	1				
25		5	"	13	24	TL	1				

BIOLOGICAL RECORD Melbourne Water

dd mm yy <u>14 / 05 / 24</u>	Collector Helper 1 Helper 2	S.L M.L.F	Site code Waterbody	DPW-13586.2 DEEP CREEK	Health Codes (disease, parasite, deformities) D - Deformity (skeletal, eye, fins, asymmetric etc) F - Fin condition (poor (broken, eroded)) G - Fungus L - Lesion (only when notable) O - Other (e.g. gas bubble eye, lamprolants; describe and photograph) P - Other parasites (leech, lamprey, leopold) S - Lesions (raised or reddish skin or scales) T - Tumour (localized abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. hit strikes, hook wounds)
---------------------------------	-----------------------------------	--------------	------------------------	---------------------------	---

Gear codes: BP-backpack, BR-backpack, LB-large boat, MB-medium boat, SB-small boat, OthP: BT-beak trap, P-plate net, P-trawl net, F-lyle net, L-trawl net, length codes: TL-total length, ICF-length to Caudal Fork, Reproductive Condition: Dress descriptor, S-sperm discharge, O-other (describe)

Seq. #	Gear type	Op. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	5	SPP	1	31	TL	1				
2		5	SFE	5	370	TL	-				
3		6	Gambusia	14	19	TL	1				
4		6	"	15	32	TL	1				
5		6	"	16	25	TL	1				
6		6	"	17	31	TL	1				
7		6	"	18	24	TL	1				
8		6	"	19	24	TL	1				
9		6	"	20	26	TL	1				
10		6	FHQ	1	49	TL	1				
11		7	Gambusia	21	22	TL	1				
12		7	"	22	23	TL	1				
13		7	REDFIN	2	320	FL	460				
14		7	"	3	69	FL	3				
15		7	"	4	239	FL	222	W			
16		7	SPP	2	43	TL	1				
17		7	SFE	6	710	TL	-				
18		7	SFE	7	750	TL	-				
19		8	Gambusia	23	29	TL	1				
20		8	"	24	24	TL	1				
21		8	"	25	23	TL	1				
22		8	SFE	8	460	TL	-				
23	DIP	10	SPP	1	37	TL	1				
24		10	Gambusia	1	27	TL	1				
25		10	"	2	23	TL	1				

Biological page # (e.g. 1/5) 3 / 4

BIOLOGICAL RECORD Melbourne Water

Collector	<u>S. L</u>	Site code <u>DPW-13586-2</u>	Health Codes (disease, parasite, deformities) P - Other parasites (leech, lamprey, lepid) S - Lesions (faded or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)
Helper 1	<u>M. LF</u>		
Helper 2		Waterbody <u>DEEP LEZER</u>	D - Deformity (skelatal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Leishman (only when notable) O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)

Gear codes: Biotrofishers: BP-backpack, LB-lighter base, MB-medium boot, SB-small boot, Other BT-bait trap, S-seal net, P-panel net, F-fyke net, L-small fish, Length codes: TL-Total length, LC-Length to Central Fork, Reproductive Condition: Eggs detected, S-spawn developing, O-Other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	<u>DIP</u>	<u>10</u>	<u>Gambusia</u>	<u>3</u>	<u>18</u>	<u>TL</u>	<u>1</u>				
2		<u>10</u>	<u>"</u>	<u>4</u>	<u>28</u>	<u>TL</u>	<u>1</u>				
3		<u>10</u>	<u>"</u>	<u>5</u>	<u>23</u>	<u>TL</u>	<u>1</u>				
4		<u>10</u>	<u>"</u>	<u>6</u>	<u>28</u>	<u>TL</u>	<u>1</u>				
5		<u>10</u>	<u>"</u>	<u>7</u>	<u>24</u>	<u>TL</u>	<u>1</u>				
6		<u>10</u>	<u>"</u>	<u>8</u>	<u>26</u>	<u>TL</u>	<u>1</u>				
7		<u>10</u>	<u>"</u>	<u>9</u>	<u>20</u>	<u>TL</u>	<u>1</u>				
8		<u>10</u>	<u>"</u>	<u>10</u>	<u>21</u>	<u>TL</u>	<u>1</u>				
9		<u>10</u>	<u>"</u>	<u>11</u>	<u>22</u>	<u>TL</u>	<u>1</u>				
10		<u>10</u>	<u>"</u>	<u>12</u>	<u>22</u>	<u>TL</u>	<u>1</u>				
11		<u>10</u>	<u>SPP</u>	<u>2</u>	<u>27</u>	<u>TL</u>	<u>1</u>	<u>F</u>			<u>FIN NIPPED</u>
12		<u>10</u>	<u>Gambusia</u>	<u>13</u>	<u>25</u>	<u>TL</u>	<u>1</u>				
13		<u>10</u>	<u>SPP</u>	<u>3</u>	<u>29</u>	<u>TL</u>	<u>1</u>				
14		<u>10</u>	<u>Gambusia</u>	<u>14</u>	<u>24</u>	<u>TL</u>	<u>1</u>				
15		<u>10</u>	<u>"</u>	<u>15</u>	<u>30</u>	<u>TL</u>	<u>1</u>				
16		<u>10</u>	<u>"</u>	<u>16</u>	<u>23</u>	<u>TL</u>	<u>1</u>				
17		<u>10</u>	<u>"</u>	<u>17</u>	<u>29</u>	<u>TL</u>	<u>1</u>				
18		<u>10</u>	<u>SPP</u>	<u>4</u>	<u>39</u>	<u>TL</u>	<u>1</u>				
19		<u>10</u>	<u>Gambusia</u>	<u>18</u>	<u>24</u>	<u>TL</u>	<u>1</u>				
20		<u>10</u>	<u>"</u>	<u>19</u>	<u>22</u>	<u>TL</u>	<u>1</u>				
21		<u>10</u>	<u>"</u>	<u>20</u>	<u>26</u>	<u>TL</u>	<u>1</u>				
22		<u>10</u>	<u>"</u>	<u>21</u>	<u>26</u>	<u>TL</u>	<u>1</u>				
23		<u>10</u>	<u>"</u>	<u>22</u>	<u>16</u>	<u>TL</u>	<u>1</u>				
24		<u>10</u>	<u>"</u>	<u>23</u>	<u>26</u>	<u>TL</u>	<u>1</u>				
25		<u>10</u>	<u>"</u>	<u>24</u>	<u>28</u>	<u>TL</u>	<u>1</u>				

Biological page # (e.g. 1/5) 4 / 4

BIOLOGICAL RECORD Melbourne Water

Collector	S.L.	Site code	DPrw-185K-2	Health Codes (disease, parasite, deformities)
Helper 1	M.L.C.	Waterbody	DEEP COEK	
Helper 2				

Gear codes: D=dropline, BP=backpack, LB=lobster boat, MB=medium boat, SB=small boat, Other: BT=flat trap, S=seine net, Panel net, F=flye net, L=larval net, Length codes: TL=total length, LFL=length to caudal fork, Reproductive condition: E=eggs discharging, S=sperm discharging, O=other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	DIP	10	Gambusia	28	25	TL	1				
2		10	"	26	29	TL	1				
3		10	"	27	33	TL	1				
4		10	"	28	22	TL	1				
5		16	"	29	20	TL	1				
6		10	"	30	18	TL	1				
7		10	"	31	22	TL	1				
8	BT	9	Gambusia	1	19	TL	1				
9		9	"	2	18	TL	1				
10		9	"	3	26	TL	1				
11		9	"	4	25	TL	1				
12		9	"	5	29	TL	1				
13		9	"	6	21	TL	1				
14		9	"	7	27	TL	1				
15		9	"	8	24	TL	1				
16		9	"	9	24	TL	1				
17		9	"	10	18	TL	1				
18		9	"	11	19	TL	1				
19		9	"	12	21	TL	1				
20		9	"	13	26	TL	1				
21		9	"	14	18	TL	1				
22		9	"	15	25	TL	1				
23		9	"	16	24	TL	1				
24		9	"	17	20	TL	1				
25											

dd 14 mm 05 YY 24

Collector S.L
 Helper 1 M.LF
 Helper 2 _____

Site code DPW-13586-2

Waterbody DEEP LAKE

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input type="checkbox"/>									
Riparian grass	<input type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input type="checkbox"/>									
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input type="checkbox"/>									
Undercuts	<input type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>									
Run	<input type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>NF</u>									
Average wetted width (m)	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>30</u>	<u>30</u>
Average depth (m)	<u>0.8</u>									
Distance travelled (m)	<u>20</u>	<u>50</u>	<u>30</u>							
Operation #										
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input type="checkbox"/>									
Riparian grass	<input type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input type="checkbox"/>									
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input type="checkbox"/>									
Undercuts	<input type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>									
Run	<input type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>NF</u>									
Average width (m)	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>30</u>	<u>30</u>
Average depth (m)	<u>0.8</u>									
Distance travelled (m)	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>50</u>	<u>30</u>

dd	mm	yy	Collector	Site code
15	05	24	Helper 1 M.L.F.	162-22832-7
			Helper 2	LEADERBERG
			Health Codes (disease, parasite, deformities)	
			D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Lernaea (only when notable) O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)	
			P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)	

Gear codes: Electrofishers: BP-backpack, UB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-lanal net; Length codes: TL-Total length, LCF-length to Caudal Fork; Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	G.Mac	1	86	FL	4				
2			"	2	87	FL	6				
3			"	3	86	FL	1				
4			"	4	85	FL	5				
5			"	5	87	FL	3				
6			"	6	89	FL	4				
7			"	7	77	FL	2				
8			REDFIN	1	181	FL	26				
9			G.Mac	8	86	FL	4				
10			"	9	86 94	FL	11				
11			G.Mac	10	75	FL	3				
12			"	11	76	FL	2				
13			"	12	78	FL	3				
14			G.OWEN	1	59	FL	1				
15			YABBY	1	28	CL	12				
16			G.Mac	18	86	FL	4				
17			"	19	94	FL	11				
18			"	15	78	FL	3				
19			REDFIN	2	119	FL	22				
20			G.Mac	16	86	FL	5				
21			"	17	83	FL	3				
22			YABBY	2	26	CL	11				
23			G.Mac	18	86	FL	5				
24			"	19	78	FL	3				
25			"	20	81	FL	3				
26			G.OWEN	2	56	FL	1				

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd 15 mm 05 YY 24

Collector S.L
 Helper 1 M.LF
 Helper 2 _____

Site code LEP-21832-7
 Waterbody LEPPINGCREEK

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10	Operation #
Substrate											
Bedrock	<input type="checkbox"/>										
Boulder (>120 mm)	<input type="checkbox"/>										
Cobble (60-200 mm)	<input type="checkbox"/>										
Gravel (2-60 mm)	<input type="checkbox"/>										
Sand (0.6-2 mm)	<input type="checkbox"/>										
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>										
Clay (<0.002 mm)	<input type="checkbox"/>										
Unknown	<input type="checkbox"/>										
Plants											
Native trees	<input type="checkbox"/>										
Exotic trees	<input type="checkbox"/>										
Native shrubs	<input type="checkbox"/>										
Riparian grass	<input type="checkbox"/>										
Floating macrophytes	<input type="checkbox"/>										
Emergent macrophytes	<input type="checkbox"/>										
Submerged macrophytes	<input type="checkbox"/>										
Filamentous algae	<input type="checkbox"/>										
Suspended algae	<input type="checkbox"/>										
Biofilms	<input type="checkbox"/>										
Cover											
Rock	<input type="checkbox"/>										
Timber	<input type="checkbox"/>										
Undercuts	<input type="checkbox"/>										
Leaf litter	<input type="checkbox"/>										
Macrophytes	<input type="checkbox"/>										
Mesohabitat											
Pools	<input type="checkbox"/>										
Run	<input type="checkbox"/>										
Riffle	<input type="checkbox"/>										
Rapid	<input type="checkbox"/>										
Backwater	<input type="checkbox"/>										
Velocity (F, M, S, NF)	<u>VF</u>	<u>VF</u>	<u>VF</u>	<u>VF</u>	<u>S/NF</u>	<u>VF</u>	<u>VF</u>	<u>S/NF</u>	<u>VF</u>	<u>VF</u>	<u>VF</u>
Average wetted width (m)	<u>0.5</u>										
Average depth (m)	<u>0.5</u>										
Distance travelled (m)	<u>50</u>	<u>50</u>	<u>50</u>	<u>40</u>	<u>25</u>	<u>25</u>	<u>25</u>	<u>25</u>	<u>50</u>	<u>50</u>	<u>50</u>
Substrate											
Bedrock	<input type="checkbox"/>										
Boulder (>120 mm)	<input type="checkbox"/>										
Cobble (60-200 mm)	<input type="checkbox"/>										
Gravel (2-60 mm)	<input type="checkbox"/>										
Sand (0.6-2 mm)	<input type="checkbox"/>										
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>										
Clay (<0.002 mm)	<input type="checkbox"/>										
Unknown	<input type="checkbox"/>										
Plants											
Native trees	<input type="checkbox"/>										
Exotic trees	<input type="checkbox"/>										
Native shrubs	<input type="checkbox"/>										
Riparian grass	<input type="checkbox"/>										
Floating macrophytes	<input type="checkbox"/>										
Emergent macrophytes	<input type="checkbox"/>										
Submerged macrophytes	<input type="checkbox"/>										
Filamentous algae	<input type="checkbox"/>										
Suspended algae	<input type="checkbox"/>										
Biofilms	<input type="checkbox"/>										
Cover											
Rock	<input type="checkbox"/>										
Timber	<input type="checkbox"/>										
Undercuts	<input type="checkbox"/>										
Leaf litter	<input type="checkbox"/>										
Macrophytes	<input type="checkbox"/>										
Mesohabitat											
Pools	<input type="checkbox"/>										
Run	<input type="checkbox"/>										
Riffle	<input type="checkbox"/>										
Rapid	<input type="checkbox"/>										
Backwater	<input type="checkbox"/>										
Velocity (F, M, S, NF)	<u>VF</u>										
Average width (m)	<u>0.5</u>										
Average depth (m)	<u>0.5</u>										
Distance travelled (m)	<u>50</u>										

dd mm / yy
15 / 05 / 24

Collector S.L
 Helper 1 M.L.F
 Helper 2 _____

Site code WERRIGE COBEF
 Waterbody WERRIGE

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Lernaea (only when notable)
 O - Other (e.g. gas bubble eye: IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack; LB-large boat; MB-medium boat; SB-small boat; Other: BT-bait trap; S-seine net; P-panel net; F-fyke net; L-lanval net; Length codes: TL-total length; LCF-length to caudal fork; Reproductive Condition: E-eggs discharging; S-sperm discharging; O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	E. YARRA	1	42	CL	17				
2		1	"	2	26	CL	2				
3		2	"	3	25	CL	3				
4		2	"	4	27	CL	2				
5		3	Redfin	1	127	FL	29				
6		5	Blackfish	1	142	TL	24				
7		6	E. YARRA	5	24	CL	2				
8		3	" 11	6	40	CL	15				
9		7	Blackfish	2	139	TL	27				
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd 15 mm 05 YY 14

Collector S.L
Helper 1 M.L.F
Helper 2 _____

Site code WERRISEE
Waterbody WERRISEE

Instructions
Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input type="checkbox"/>									
Riparian grass	<input type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input type="checkbox"/>									
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input type="checkbox"/>									
Undercuts	<input type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>									
Run	<input type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>M</u>	<u>M</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M.S</u>	<u>M</u>
Average wetted width (m)	<u>10</u>	<u>6</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>7</u>	<u>7</u>	<u>5</u>	<u>10</u>	<u>10</u>
Average depth (m)	<u>0.6</u>	<u>0.6</u>	<u>0.8</u>	<u>0.8</u>	<u>0.8</u>	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Distance travelled (m)	<u>30</u>	<u>50</u>	<u>50</u>							

<u>dd</u> <u>mm</u> <u>yy</u> <u>15</u> / <u>05</u> / <u>04</u>	Collector Helper 1 Helper 2	Site code Waterbody	Health Codes (disease, parasite, deformities)
	<u>S.L.</u> <u>M.L.F.</u>	<u>WER-30289-9</u> <u>WERPIDGE</u>	D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Lerrnaea (only when notable) O - Other (e.g. gas bubble eye: IMPORTANT: describe and photograph)
			P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat; Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-lanal net. Length codes: TL-Total length, LCF-Length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP.#	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	S	SFE	1	610	TL	-				
2	↓	6	REDFIN	1	85	FL	9				
3		7	G.Mac	1	81	FL	3				
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd 15/05/24 mm 15 yy 24

Collector J.L
 Helper 1 M.L.F
 Helper 2 _____

Site code WER-30289-9
 Waterbody WERRIBEE

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boulder (>120 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cobble (60-200 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gravel (2-60 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sand (0.6-2 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clay (<0.002 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exotic trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native shrubs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Riparian grass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Submerged macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filamentous algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suspended algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biofilms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Undercuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaf litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mesohabitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pools	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Run	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Riffle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rapid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Velocity (F, M, S, NF)	<u>3</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5/M</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5</u>	<u>0</u>
Average wetted width (m)	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>10</u>	<u>10</u>	<u>15</u>	<u>15</u>	<u>15</u>
Average depth (m)	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.3</u>	<u>0.3</u>	<u>0.5</u>	<u>0.5</u>
Distance travelled (m)	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>50</u>	<u>50</u>

FISH SAMPLING RECORD - INSTRUCTIONS, WATER QUALITY & GENERAL DESCRIPTION

Checked & Entered 28/5
 MW.F.RS.1

Date sample began dd mm YY 14 / 05 / 24	Collector Saxon Lamin	Waterbody DEEP Creek	Site code DFW-63085-7
Helper 1 MATT LEFEVRE	Helper 2	Location description: Ar KOURGADEEN BEACH Reserve	

Instructions and tips
 IMPORTANT: Do not leave a site without checking that all data has been collected. Please take care and time when filling out the forms. Mark circles with a cross or leave blank if not seen.

Water Quality and General Description Sheet

*Complete water quality at least twice at each surveyed reach.
 River/estuary sampling: surface water (~0.2m) at the most representative part of survey reach - 2nd sample if environment substantially changes along reach.
 Wetland sampling: depth profile at the deepest part of surveyed reach (0.2m, 1m, 2m, ... so on until the bottom)
 *Record date and time for observations.

Biological Record

*Record counts of all individuals caught for each species.
 *Measure every individual length, weight, health codes, sex, and reproductive condition until 30 individuals per species and per gear type (electro, bait) have been measured. Try to capture the shortest and longest individual within these 30 individuals. After the 30th individual, no measurements are required, just total counts.
 *Fish records and counts can also include fish seen and accurately identified, but not caught - but these are to be recorded these separately (as 'observed' not 'caught'). Crustaceans (yabbies, crayfish, shrimp) and platypus are also to be recorded and identified to genus, when necessary/possible.

*Separate 'Condition' codes with a "/" and always provide a brief description when using the "O" (Other) code. You may record the number of abnormalities in brackets, i.e.
 If a fish has, 1 wound, 6 Lernaea and bubble eye: W (1) / L (6) / O (bubble eye).
 *Record Lernaea when a notable number are present. This is defined as: if fish <100 mm total length, report any Lernaea; if fish >100 mm total length, report if more than 3 Lernaea.

Effort and Catch Record Sheet

*Please record a start time, end time, and method for every operation.
 *Where data for an operation are the same as the previous operation, some fields can be left blank. This applies to the start date, end date, net length, net mesh and electrofishing setting fields.
 *Record every operation individually for electrofishing. If there are 10 unbaited bait traps, pool all together (Method B10).
 *Species code is a combination of the first four letters of the fish's genus and species (i.e. Tupong, *Pseudaphritis urvillii*, code is PSEURV).
Habitat Record
 * Record data for the area within waterbody banks.
 * The difference between a tree and a shrub is that a tree is at least 5cm in diameter at a point 1m above the ground. Shrubs usually have many small stems rising from the base.
 * Mesohabitat definitions: Pool (deep, wide, slow), Run (moderate depth, width and velocity, with an unbroken surface), Riffle (shallow, fast, broken surface), Rapid (turbulent, fast, steep), Backwater (separate from main channel, low flow).
 * Velocity definitions are: F=Fast (>0.5m/s), M=Moderate (<0.1m/s), NF=No flow (stagnant).
 * Submerged macrophytes have both roots and leaves underwater. Emergent macrophytes are rooted underwater but some leaves are either out of the water or floating. Floating macrophytes are not rooted to the substrate.
 * Biofilm is the coat of green/brown slime (consisting of microorganisms) covering rocks, plants etc. Filamentous algae are fine, thin threads of algae normally attached to plants, rocks etc. Suspended algae are non attached and floating.
 * Wetted width refers to the average wetted channel width.

Sample #	Depth (m)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (NTU)	Secchi (m)	D.O. (mg/L)	D.O. (%sat)	Platypus
1	0.2	12.6	7.68	1029	5.60	-	7.15	66.3	Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>
									Not seen <input checked="" type="radio"/>
									Seen <input type="radio"/>

dd <u>14</u> / <u>05</u> / <u>24</u>	mm <u> </u>	yy <u> </u>	Collector <u>S.L</u>	Site code <u>DPW-6308-7</u>	Health Codes (disease, parasite, deformities) D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Lernaea (only when notable) O - Other (e.g. gas bubble eye. IMPORTANT: describe and photograph) P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)
Helper 1 <u>M.LF</u>	Helper 2 <u> </u>	Waterbody <u>DEEP LAKE</u>			

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-sine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	3	SFE	1	770	TL	-				
2		5	SFE	2	680	TL	-				
3		6	G.Mac	1	777	TL	4				
4		8	SFE	1	260	TL	-				
5	BT	9	G.Omn	1	56	TL	2				
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd 14 mm 105 YY 24

Collector S.L
 Helper 1 M.L.S
 Helper 2 _____

Site code FW-63085-7
 Waterbody DEEP CREEK

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input checked="" type="checkbox"/>									
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input checked="" type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input checked="" type="checkbox"/>									
Riparian grass	<input checked="" type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input checked="" type="checkbox"/>									
Submerged macrophytes	<input checked="" type="checkbox"/>									
Filamentous algae	<input checked="" type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input checked="" type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input checked="" type="checkbox"/>									
Undercuts	<input checked="" type="checkbox"/>									
Leaf litter	<input checked="" type="checkbox"/>									
Macrophytes	<input checked="" type="checkbox"/>									
Mesohabitat										
Pools	<input checked="" type="checkbox"/>									
Run	<input checked="" type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>5</u>									
Average wetted width (m)	<u>6</u>	<u>6</u>	<u>6</u>	<u>8</u>	<u>8</u>	<u>6</u>	<u>5</u>	<u>6</u>	<u>6</u>	<u>6</u>
Average depth (m)	<u>0.5</u>									
Distance travelled (m)	<u>30</u>									

dd mm yy <u>15</u> / <u>05</u> / <u>24</u>	Collector Helper 1 Helper 2	Site code Waterbody	Health Codes (disease, parasite, deformities)
	S.L. M.L.E.	MB-13-310-2 Melbourne	D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Lernaea (only when notifiable) O - Other (e.g. gas bubble eye. IMPORTANT: describe and photograph)
			P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, UB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net. Length codes: TL-Total length, LG-Length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	F	10	SFE	1	560	TL	-				
2	F	10	SFE	2	610	TL	-				
3	BP	5	"	1	730	TL	-				
4	RP	6	"	2	660	TL	-				
5	RP	6	"	3	570	TL	-				
6	BT	9	FHQ	1	55	TL	1				
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Effort/catch pg # (e.g. 1/3) 1 / 1

EFFORT AND CATCH RECORD Melbourne Water

dd mm yy	Collector	Site code	Gear codes
<u>15 / 05 / 24</u>	Helper 1 <u>M. LF</u> Helper 2 _____	Waterbody <u>MARIBYRNAN</u>	Electrofishers: BP – backpack, LB – large boat, MB – medium boat, SB – small boat Other: BT – bait trap, S – seine net, P – panel net, F – fyke net, L – larval net

Operation #	Time (24hr)	Start	End	Date	Method	#cght (#obs)													
						1	2	3	4	5	6	7	8	9	10				
		7:53:00	8:05:00	16/5/24	BP	1	1	1	1	1	2	1	1	1	1	1	1	1	1
		8:05:00	8:12:00	16/5/24	BP														
		8:12:00	8:20:00	16/5/24	BP														
		8:20:00	8:27:00	16/5/24	BP														
		8:27:00	8:35:00	16/5/24	BP														
		8:35:00	8:42:00	16/5/24	BP														
		8:42:00	8:50:00	16/5/24	BP														
		8:50:00	9:00:00	16/5/24	BP														
		9:00:00	9:09:00	16/5/24	BT														
		9:09:00	9:17:00	16/5/24	F														
		9:17:00	9:25:00	16/5/24	F														
		9:25:00	9:33:00	16/5/24	F														
		9:33:00	9:41:00	16/5/24	F														
		9:41:00	9:49:00	16/5/24	F														
		9:49:00	9:57:00	16/5/24	F														
		9:57:00	10:05:00	16/5/24	F														
		10:05:00	10:13:00	16/5/24	F														
		10:13:00	10:21:00	16/5/24	F														
		10:21:00	10:29:00	16/5/24	F														
		10:29:00	10:37:00	16/5/24	F														
		10:37:00	10:45:00	16/5/24	F														
		10:45:00	10:53:00	16/5/24	F														
		10:53:00	11:01:00	16/5/24	F														
		11:01:00	11:09:00	16/5/24	F														
		11:09:00	11:17:00	16/5/24	F														
		11:17:00	11:25:00	16/5/24	F														
		11:25:00	11:33:00	16/5/24	F														
		11:33:00	11:41:00	16/5/24	F														
		11:41:00	11:49:00	16/5/24	F														
		11:49:00	11:57:00	16/5/24	F														
		11:57:00	12:05:00	16/5/24	F														
		12:05:00	12:13:00	16/5/24	F														
		12:13:00	12:21:00	16/5/24	F														
		12:21:00	12:29:00	16/5/24	F														
		12:29:00	12:37:00	16/5/24	F														
		12:37:00	12:45:00	16/5/24	F														
		12:45:00	12:53:00	16/5/24	F														
		12:53:00	13:01:00	16/5/24	F														
		13:01:00	13:09:00	16/5/24	F														
		13:09:00	13:17:00	16/5/24	F														
		13:17:00	13:25:00	16/5/24	F														
		13:25:00	13:33:00	16/5/24	F														
		13:33:00	13:41:00	16/5/24	F														
		13:41:00	13:49:00	16/5/24	F														
		13:49:00	13:57:00	16/5/24	F														
		13:57:00	14:05:00	16/5/24	F														
		14:05:00	14:13:00	16/5/24	F														
		14:13:00	14:21:00	16/5/24	F														
		14:21:00	14:29:00	16/5/24	F														
		14:29:00	14:37:00	16/5/24	F														
		14:37:00	14:45:00	16/5/24	F														
		14:45:00	14:53:00	16/5/24	F														
		14:53:00	15:01:00	16/5/24	F														
		15:01:00	15:09:00	16/5/24	F														
		15:09:00	15:17:00	16/5/24	F														
		15:17:00	15:25:00	16/5/24	F														
		15:25:00	15:33:00	16/5/24	F														
		15:33:00	15:41:00	16/5/24	F														
		15:41:00	15:49:00	16/5/24	F														
		15:49:00	15:57:00	16/5/24	F														
		15:57:00	16:05:00	16/5/24	F														
		16:05:00	16:13:00	16/5/24	F														
		16:13:00	16:21:00	16/5/24	F														
		16:21:00	16:29:00	16/5/24	F														
		16:29:00	16:37:00	16/5/24	F														
		16:37:00	16:45:00	16/5/24	F														
		16:45:00	16:53:00	16/5/24	F														
		16:53:00	17:01:00	16/5/24	F														
		17:01:00	17:09:00	16/5/24	F														
		17:09:00	17:17:00	16/5/24	F														
		17:17:00	17:25:00	16/5/24	F														
		17:25:00	17:33:00	16/5/24	F														
		17:33:00	17:41:00	16/5/24	F														
		17:41:00	17:49:00	16/5/24	F														
		17:49:00	17:57:00	16/5/24	F														
		17:57:00	18:05:00	16/5/24	F														
		18:05:00	18:13:00	16/5/24	F														
		18:13:00	18:21:00	16/5/24	F														
		18:21:00	18:29:00	16/5/24	F														
		18:29:00	18:37:00	16/5/24	F														
		18:37:00	18:45:00	16/5/24	F														
		18:45:00	18:53:00	16/5/24	F														
		18:53:00	19:01:00	16/5/24	F														
		19:01:00	19:09:00	16/5/24	F														
		19:09:00	19:17:00	16/5/24	F														
		19:17:00	19:25:00	16/5/24	F														
		19:25:00	19:33:00	16/5/24	F														
		19:33:00	19:41:00	16/5/24	F														
		19:41:00	19:49:00	16/5/24	F														
		19:49:00	19:57:00	16/5/24	F														
		19:57:00	20:05:00	16/5/24	F														
		20:05:00	20:13:00	16/5/24	F														
		20:13:00	20:21:00	16/5/24	F														
		20:21:00	20:29:00	16/5/24	F														
		20:29:00	20:37:00	16/5/24	F														
		20:37:00	20:45:00	16/5/24	F														
		20:45:00	20:53:00	16/5/24	F														

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
10 / 05 / 14

Collector S.L.
Helper 1 M.L.F.
Helper 2

Site code M2B-15030-2
Waterbody MARIB-RIVER

Instructions

Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>	<input type="checkbox"/>								
Boulder (>120 mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cobble (60-200 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Gravel (2-60 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Sand (0.6-2 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Mid/silt (0.002-0.6 mm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Clay (<0.002 mm)	<input type="checkbox"/>	<input type="checkbox"/>								
Unknown	<input type="checkbox"/>	<input type="checkbox"/>								
Plants										
Native trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Exotic trees	<input type="checkbox"/>	<input type="checkbox"/>								
Native shrubs	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Riparian grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Floating macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Emergent macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Submerged macrophytes	<input type="checkbox"/>	<input type="checkbox"/>								
Filamentous algae	<input type="checkbox"/>	<input type="checkbox"/>								
Suspended algae	<input type="checkbox"/>	<input type="checkbox"/>								
Biofilms	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Cover										
Rock	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Timber	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Undercuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Leaf litter	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Macrophytes	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Mesohabitat										
Pools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Run	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riffle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rapid	<input type="checkbox"/>	<input type="checkbox"/>								
Backwater	<input type="checkbox"/>	<input type="checkbox"/>								
Velocity (F, M, S, NF)	<u>S</u>	<u>DF</u>	<u>DF</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>S</u>
Average wetted width (m)	<u>5</u>	<u>10</u>	<u>DF</u>	<u>12</u>	<u>10</u>	<u>5</u>	<u>8</u>	<u>20</u>	<u>15</u>	<u>15</u>
Average depth (m)	<u>0.5</u>	<u>0.5</u>	<u>0.8</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0.4</u>	<u>1</u>	<u>1</u>	<u>1</u>
Distance travelled (m)	<u>30</u>	<u>30</u>								

dd <u>16</u> / <u>05</u> / <u>22</u>	mm <u>16</u>	yy <u>22</u>	Collector <u>S.L</u>	Site code <u>W22-138085-6</u>	Health Codes (disease, parasite, deformities) D - Deformity (skeletal, eye, fins, asymmetric etc.) F - Fin condition poor (broken, eroded) G - Fungus L - Larvae (only when notable) O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph) P - Other parasites (leech, lamprey, isopod) S - Lesions (raised or reddish skin or scales) T - Tumour (localised abnormal growth) U - Ulcer (skin is broken, crater like, redness) W - Wounds (e.g. bird strikes, hook wounds)
Helper 1 <u>M.L.F</u>	Waterbody <u>WERREIREE</u>	Helper 2			

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat. Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, Larval net. Length codes: TL-Total length, LCF-length to Caudal Fork. Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear Type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	TURBOA	1	123	TL	16				
2		1	SFE	1	540	TL	-				
3		1	SFE	2	510	TL	-				
4		1	SFE	3	630	TL	-				
5		1	C. Mac	1	166	FL	19				
6		2	TURBOA	2	127	TL	17				
7		2	"	3	113	TL	12				
8		2	SFE	4	460	TL	-				
9		3	C. Mac	2	124	FL	13				
10		3	SFE	3	340	TL	47				
11		4	TURBOA	4	89	TL	3				
12		4	"	5	117	TL	13				
13		4	"	6	84	TL	3				
14		4	"	7	116	TL	10				
15		4	FHG	1	58	TL	1				
16		5	C. Mac	3	98	FL	2				
17		5	TURBOA	8	124	TL	15				
18		5	"	9	87	TL	2				
19		5	"	10	123	TL	15				
20		6	TURBOA	11	98	TL	5				
21		6	SFE	6	660	TL	-				
22		7	SFE	7	430	TL	89				
23		7	SFE	8	270	TL	35				
24		7	C. Mac	4	71	FL	1				
25		8	TURBOA	12	69	TL	1				
26		8	TURBOA	13	122	TL	14				

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
16 / 05 / 24

Collector Helper 1
 Helper 2 MLF

Site code VEG-13095-6
 Waterbody WERRIBREE

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

	1	2	3	4	5	6	7	8	9	10
Operation #	1	2	3	4	5	6	7	8	9	10
Substrate	Bedrock									
	Boulder (>120 mm)									
	Cobble (60-200 mm)									
	Gravel (2-60 mm)									
	Sand (0.6-2 mm)									
	Mid/silt (0.002-0.6 mm)									
	Clay (<0.002 mm)									
	Unknown									
Plants										
	Native trees									
	Exotic trees									
	Native shrubs									
	Riparian grass									
	Floating macrophytes									
	Emergent macrophytes									
	Submerged macrophytes									
	Filamentous algae									
	Suspended algae									
	Biofilms									
Cover										
	Rock									
	Timber									
	Undercuts									
	Leaf litter									
	Macrophytes									
Mesohabitat										
	Pools									
	Run									
	Riffle									
	Rapid									
	Backwater									
	Velocity (F, M, S, NF)									
	Average wetted width (m)									
	Average depth (m)									
	Distance travelled (m)									

dd mm yy
16 / 05 / 24

Collector S-L
 Helper 1 M.L.C
 Helper 2 _____

Site code YAR-3940493
 Waterbody Yarra

Health Codes (disease, parasite, deformities)
 D - Deformity (skeletal, eye, fins, asymmetric etc.)
 F - Fin condition poor (broken, eroded)
 G - Fungus
 L - Larvae (only when notable)
 O - Other (e.g. gas bubble eye, IMPORTANT: describe and photograph)
 P - Other parasites (leech, lamprey, isopod)
 S - Lesions (raised or reddish skin or scales)
 T - Tumour (localised abnormal growth)
 U - Ulcer (skin is broken, crater like, redness)
 W - Wounds (e.g. bird strikes, hook wounds)

Gear codes: Electrofishers: BP-backpack, LB-large boat, MB-medium boat, SB-small boat, Other: BT-bait trap, S-seine net, P-panel net, F-fyke net, L-larval net, Length codes: TL-Total length, LCF-Length to Caudal Fork, Reproductive Condition: E-eggs discharging, S-sperm discharging, O-other (describe)

Seq. #	Gear type	OP. #	Species Code	Fish #	Length (mm)	Length code	Weight (g)	Health Codes	Sex	Repro. Cond.	Comment (and Tag #)
1	BP	1	Y.F. GOBY	1	154	TL	24				
2		1	FHG	1	49	TL	1				
3		1	?	2	43	TL	1				
4		1	?	3	52	TL	1				
5		1	?	4	52	TL	1				
6		1	G.MAC	1	110	TL	4				
7		2	TURBID	1	119	TL	13				
8		2	SFE	1	630	TL	-				
9		2	SFE	2	510	TL	-				
10		2	FHG	5	34	TL	1				
11		2	FHG	6	55	TL	2				
12		2	FHG	7	48	TL	1				
13		3	SFE	3	460	TL	-				
14		3	SFE	4	720	TL	-				
15		3	Y.F. GOBY	2	148	TL	24				
16		3	G.MAC	2	89	FL	2				
17		4	FHG	1	44	TL	1				
18		5	G.MAC	3	91	FL	3				
19		5	G.MAC	4	96	FL	2				
20		6	FHG	9	46	FL	1				
21		7	G.MAC	5	94	FL	23				
22		7	FHG	10	31	TL	1				
23		8	FHG	11	52	TL	2				
24		8	FHG	12	35	TL	1				

Effort/catch pg # (e.g. 1/3) 1 / 1

EFFORT AND CATCH RECORD Melbourne Water

dd mm yy <u>16</u> / <u>05</u> / <u>24</u>	Collector Helper 1 Helper 2	<u>S.L</u> <u>M.L.P</u>	Site code Waterbody	<u>VAZ-524049-3</u> <u>YARRA</u>
---	-----------------------------------	----------------------------	------------------------	-------------------------------------

Gear codes
Electrofishers: BP – backpack, LB – large boat, MB – medium boat, SB – small boat
Other: BT – bait trap, S – seine net, P – panel net, F – fyke net, L – larval net

Operation #	Start	End	Method	Mesh (mm)	Volts	pulses per sec	% duty cycle (range)	amps
1	13:30:00	13:40:00	BP	0	150	30	2.2	
2	13:50:00	13:55:00	BP	150	300	12		
3	13:55:00	14:00:00	BP	300	450			
4	14:00:00	14:10:00	BP	450	600			
5	14:10:00	14:20:00	BP	600	750			
6	14:20:00	14:30:00	BP	750	900			
7	14:30:00	14:40:00	BP	900	1050			
8	14:40:00	14:50:00	BP	1050	1200			
9	13:30:00	15:30:00	BT	10 NETS				

Species Code	#cght (#obs)								
Yellow Fin GobY	1		1						
Flathead Gurreon	4(2)	3(1)		1				2	
Gastropods Macoulatus			1(1)		2				
TURPINK		1							
SHOETIN EA		2							
NO FISH								1	

Habitat page # (e.g. 1/3) 1 / 1

HABITAT RECORD Melbourne Water

dd mm yy
16 / 05 / 24

Collector 0.4
 Helper 1 M.L.F
 Helper 2 _____

Site code YAR-374048-3
 Waterbody YARRA

Instructions
 Mark circles with cross or fill in. Leave boxes blank if the item was not seen.
 Definitions for some items are on first sheet.

Operation #	1	2	3	4	5	6	7	8	9	10
Substrate										
Bedrock	<input type="checkbox"/>									
Boulder (>120 mm)	<input type="checkbox"/>									
Cobble (60-200 mm)	<input type="checkbox"/>									
Gravel (2-60 mm)	<input type="checkbox"/>									
Sand (0.6-2 mm)	<input type="checkbox"/>									
Mid/silt (0.002-0.6 mm)	<input type="checkbox"/>									
Clay (<0.002 mm)	<input type="checkbox"/>									
Unknown	<input type="checkbox"/>									
Plants										
Native trees	<input type="checkbox"/>									
Exotic trees	<input type="checkbox"/>									
Native shrubs	<input type="checkbox"/>									
Riparian grass	<input type="checkbox"/>									
Floating macrophytes	<input type="checkbox"/>									
Emergent macrophytes	<input type="checkbox"/>									
Submerged macrophytes	<input type="checkbox"/>									
Filamentous algae	<input type="checkbox"/>									
Suspended algae	<input type="checkbox"/>									
Biofilms	<input type="checkbox"/>									
Cover										
Rock	<input type="checkbox"/>									
Timber	<input type="checkbox"/>									
Undercuts	<input type="checkbox"/>									
Leaf litter	<input type="checkbox"/>									
Macrophytes	<input type="checkbox"/>									
Mesohabitat										
Pools	<input type="checkbox"/>									
Run	<input type="checkbox"/>									
Riffle	<input type="checkbox"/>									
Rapid	<input type="checkbox"/>									
Backwater	<input type="checkbox"/>									
Velocity (F, M, S, NF)	<u>0.25</u>	<u>0.25</u>	<u>M</u>	<u>M</u>	<u>0.5</u>	<u>M</u>	<u>ME</u>	<u>M/F</u>	<u>0.5</u>	<u>0.5</u>
Average wetted width (m)	<u>1.30</u>	<u>1.30</u>	<u>0.6</u>	<u>1</u>	<u>1</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>1</u>	<u>1</u>
Average depth (m)	<u>0.30</u>	<u>0.30</u>	<u>0.20</u>							
Distance travelled (m)	<u>30</u>	<u>50</u>	<u>50</u>							