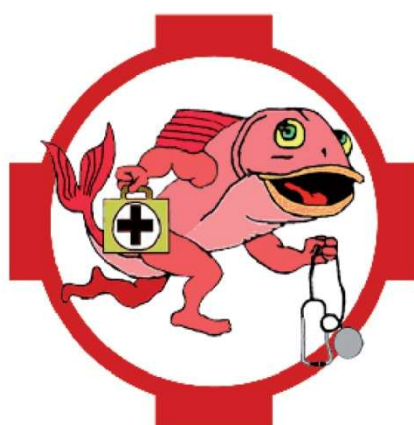




# The Fish Vet

## Services and Fees Manual – 2026



# The Fish Vet

In the event of any enquiries with respect to this material, please contact:  
**Dr Richmond Loh**, The Fish Vet • **Tel:** +61 (0)421 822 383 • **Email:** [thefishvet@gmail.com](mailto:thefishvet@gmail.com)



## BACKGROUND TO THE SCOPE OF WORKS

At The Fish Vet, our team includes two American Board-certified Fish Veterinarians (DABVP – Fish Practice), two veterinarians holding Membership by Examination with the Australian and New Zealand College of Veterinary Scientists (MANZCVS) in the Aquatic Animal Health Chapter, and one veterinarian with Membership by Examination in the Pathobiology Chapter.

The Fish Vet provides comprehensive aquatic veterinary services across the following locations:

- Perth (Welshpool), Western Australia, Australia.
- Melbourne (Brunswick), Victoria, Australia.
- Brisbane, Queensland, Australia.
- Interstate and international services can be arranged by prior agreement.

As a true one-stop aquatic veterinary service, The Fish Vet integrates clinical care, diagnostics, and management advice. This approach eliminates information loss, reduces delays and duplication of work, and ensures continuity, efficiency, and clarity through continuous case management.

Services offered include:

- Disease diagnosis (including histopathology) and treatment
- Health management and advisory services
- Health certification
- Supply of veterinary resources
- Education and research support

We service the following sectors:

- Pet ornamentals (e.g. home aquariums, ponds, aquaponics systems)
- Display aquaria (e.g. public aquariums and zoos)
- Commercial aquaculture (e.g. foodfish, ornamental fish farms, retailers, wholesalers, exporters)
- Education and research (e.g. universities, researchers, hobby and professional groups)

*NB: Results from testing for endemic diseases remain confidential to the submitter. If there is suspicion and/or confirmation of reportable disease, we are required (by law or regulatory policies) to notify appropriate authorities. TFV reserves the right to use the samples for its own research and testing. TFV reserves sole and absolute discretion to engage any third-party to provide any part(s) or all of the testing services.*

*By submitting to The Fish Vet, you acknowledge the terms and conditions as set out above. If you suspect a reportable disease, you must report it by calling the Emergency Disease Hotline 1800 675 888.*







# THE FISH VET's TEAM

## Dr Richmond Loh – Perth (WA)

*BSc, BVMS, MANZCVS (Aquatic Animal Health), MPhil (Vet Pathology), DipPM, MANZCVS (Pathobiology), CertAqV, FWAVMA, GradDipEdu, DABVP (Fish Practice).*



Dr Richmond Loh is an ABVP® Board-Certified Veterinarian providing aquatic veterinary services, including fish pathology testing, across foodfish and non-food sectors, encompassing finfish, molluscs and crustaceans. His clients include aquaculture producers, pet and ornamental fish keepers, public and display aquaria, retailers and researchers. He has been admitted to the Australian and New Zealand College of Veterinary Scientists by examinations in both the subjects of Pathobiology and Aquatic Animal Health, making him a qualified a veterinary pathologist and an aquatic veterinarian. He is a Certified Aquatic Veterinarian, a Distinguished Fellow of the World Aquatic Veterinary Medical Association (WAVMA) and has been awarded the George Alexander International Fellowship by the International Specialised Skills Institute. He is a Past-President of the WAVMA, and is an Adjunct Senior Lecturer at Murdoch University, serving as the Academic Advisor for the Murdoch University WAVMA Student Chapter since its inception.

He has published practical manuals and instructional videos to help fellow veterinarians and fish owners, for the betterment of fish health and welfare globally:

- Fish Vet Masterclass - online advanced training for fish veterinarians at <http://fishvetmasterclass.com>
- YouTube Channel - <http://tinyurl.com/TheFishDoctor>

## Dr Loh's University and Post-Graduate Qualifications:

- Diplomate of the American Board of Veterinary Practitioners® - Fish Practice (2026).
- Graduate Diploma of Education - Curtin University (2025).
- Examined Member Australian & New Zealand College of Veterinary Scientists - Pathobiology Chapter (2009).
- Examined Member Australian & New Zealand College of Veterinary Scientists - Aquatic Animal Health Chapter (2006).
- Master of Philosophy (Veterinary Pathology) - Murdoch University (2006).
- Diploma of Project Management - TAFE, Tasmania (2007);
- Bachelor of Veterinary Medicine & Surgery - Murdoch University (2001).
- Bachelor of Science - Murdoch University (1999).





## Dr Loh's Other Qualifications and Pertinent Posts:

- Animal Health Accreditation Advisory Committee Member for NATA (2023–present).
- Technical Assessor - National Association of Testing Authorities (NATA) (2022–present).
- Distinguished Fellow the World Aquatic Veterinary Medical Association (2018).
- Certified Aquatic Veterinarian by the World Aquatic Veterinary Medical Association (2013).
- President of the World Aquatic Veterinary Medical Association (2014).
- George Alexander International Fellow - International Specialised Skills Institute (2012).
- Senior Adjunct Lecturer, Murdoch University, School of Veterinary Science (2009–present).

## Other Works:

- Senior Veterinary Pathologist and Manager of the Histopathology Laboratory at the Department of Primary Industries and Regional Development (2007-2026).
- Co-author the Wiley texts *Fundamentals of Aquatic Veterinary Medicine* and *Pathology and Epidemiology of Aquatic Animal Diseases for Practitioners*.
- Co-investigator for the *National Survey of Diseases Affecting Commercially Exploited Abalone Species*, supporting both industry profitability and sustainability.
- Led the diagnostic component of the *CRC North Australian Tropical Rock Oyster Disease survey for Western Australia*.

## Dr Karlee Hirakis – Brisbane (Queensland)

BVSc, CertAqV, DABVP (Fish Practice)

Dr Karlee Hirakis is an aquatic veterinarian with advanced training and experience in fish health and aquaculture medicine. She is ABVP® Board-Certified Veterinarian (completed specialist-level examination in Fish Practice) and a WAVMA-certified aquatic veterinarian. Karlee graduated from the University of Sydney in 2013 and has worked across rural mixed practice, small animal practice, and aquatic animal health.



Since 2020, she has worked with The Fish Vet, providing veterinary services for ornamental, aquarium and production fish. She also works with the CSIRO Aquaculture Research Institute, contributing to research and applied aquatic health projects. Karlee combines evidence-based medicine with a practical, welfare-focused approach to fish care, supporting both individual animals and broader aquatic systems.



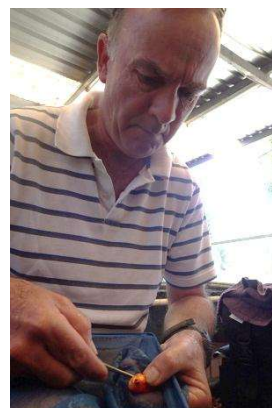




## Dr Alistair Brown – Melbourne (Victoria)

*BSc BVMS CertFHP MANZCVS (Aquatic Animal Health)*

Dr Alistair Brown is an aquatic veterinarian and began his career in the aquatics field in 1991 when he began working for Marine Harvest Scotland (producers of Atlantic salmon). Since then, he has worked with a range of commercial species including Australian native fish, salmonids and abalone. Now as part of The Fish Vet's team, he provides veterinary services to pet fishes of all kinds.



### University-based qualifications:

- Bachelor of Veterinary Medicine and Surgery - Murdoch University (1987)
- Bachelor of Science - Murdoch University (1985)

### Other qualifications:

- Examined Member Australian and New Zealand College of Veterinary Scientists (Aquatic Animal Health) (1999)
- Certificate in Fish Health and Production (Royal College of Veterinary Surgeons) (1995)

### Publications:

- Use of amoxycillin by injection in Atlantic salmon brood stock.
- Veterinary Record (1992) 131,237. A.G. Brown & A.N. Grant.
- Clinical efficacy of injectable amoxycillin against furunculosis in Atlantic salmon brood stock.
- Veterinary Record (1993) 133, 373. A.G. Brown & A.N. Grant.
- Plasma lipase concentration as an aid to the early detection of pancreas disease in farmed Atlantic salmon.
- Veterinary Record (1994) 135, 107-108. A.N. Grant, A.G. Brown & L.A. Laidler.
- Investigation into the use of potentiated sulphonamide in Atlantic salmon.
- Fish Veterinary Journal (1996) 1, 14–20. A.G. Brown.
- Rickettsia-like organism in farmed salmon.
- Veterinary Record (1996) 138, 423 –424. A.N. Grant, A.G. Brown, D.I. Cox, T.H. Birkbeck & A.A. Griffen.
- Treatment of Trichodina infestations of the greenback flounder using freshwater.
- Bulletin of the European Association Fish Pathologists (1998) 18(6), 1-2. A.G. Brown & J. Markus.





## SERVICES AND RATES\*

Services	Fee	Unit	Notes
Consultation - Ornamental	\$242.00	per hour	Minimum fee of 1 hour for onsite work
Consultation - Remote	\$85.00	per 20min	<ul style="list-style-type: none"> <li>• Email advisory</li> <li>• Video or phone consultations</li> <li>• Diagnostic interpretation</li> <li>• Second-opinions</li> <li>• Treatment planning</li> <li>• Report preparation</li> <li>• Case review and follow-up.</li> </ul>
Consultation - Commercial	\$378.00	per hour	
Consultation - Commercial	\$1,925.00	per day	Up to 8 hours.
Local travel	\$2.50	per km	
Interstate/overseas travel	POA		Costs of return airfares, airport transfers and accommodation are borne by the client. Payment needs to be received prior to work. Travel time charged at 50% of daily rate.
Health Certification	POA		
Prescription/medicines	POA		
Surgery/anaesthesia	POA		
Research	POA		
Audits	POA		
Training	POA		
Retainer	POA		Retainer time: 70% rate to the monthly cap; excess at standard rates.







Laboratory Testing	Fee	Unit	Notes
<b>General</b>			
Laboratory submission fee	\$55.00	per submission	
P&H	POA		courier fees passed to client
Priority Loading	25%	per case	surcharge
<b>Pathology</b>			
Cytology	\$68.50	per 1-3 slides	Submit as air-dried preparations
Histology - first slide			Send in 10%NBF
First slide	\$177.60	per slide	
Additional slides (HE, Gram, ZN, Giemsa)	\$96.30	per slide	
Special histological stains (silver stains, etc.)	\$105.00	per slide	
Necropsy	POA	per hour	

**Formalin-fixed materials may be received from overseas clients.**

When sending these specimens, please utilise the official letterhead of your department and make it clear that these samples are derived from fish and have been preserved in 10% buffered formalin for a minimum of 24 hours. It is important to note that the inspectors prefer the tissues to be fully submerged in formalin, so please ensure that you do not transport fixed tissues in a dry condition. Note that the percentage of formalin in preservatives declines once samples are added. Solutions containing less than 10% formalin are not classified as dangerous goods and can be sent by air. They need to be packed according to IATA standard, tissues in sturdy leak-proof screw-cap plastic bottles, into double zip-lock bags, and then placed in another sturdy plastic container packed with absorbent materials. Include a sticker with the following:

**“Not restricted as per Special Provision A189b”**

Accompany the package with a printed document that displays the website address of the Department of Agriculture, Water and the Environment (DAWR), affirming that no import permits are necessary for formalin-fixed tissues. This is an important reference, as not all inspectors may be familiar with this regulation.

The website link is as follows: <http://www.agriculture.gov.au/import/goods/biological/checklist/lab-materials>

**"No import permit is required for tissues fixed in either 2% glutaraldehyde, 70% alcohol, 10% formalin, or 4% formaldehyde."**

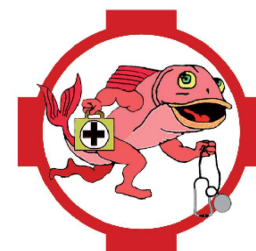
Before collecting and dispatching the samples, please make a prior arrangement by calling ahead. This will enable The Fish Vet to provide guidance, offer advice, and better plan and prioritise the handling of the samples.

Ensure that the samples are properly labelled with your name, address, email, telephone number, and clear identification of the specimens. This labelling is essential for efficient tracking and communication during the processing of these specimens.





# Diagnostic Sampling Protocol - FISH



**The Fish Vet**

The information provided below is for routine diagnostic investigation. For specific disease investigations call [TheFishVet](https://thefishvet.com.au).

## Sampling Fish

1. Choose representative sick fish to euthanase for sampling (please indicate method of euthanasia).
  2. For **bacteriology**, make a ventral midline incision and if bacteriology is required, aseptically swab kidney (Fig. 1).
  3. For **molecular biology** (PCR) testing, collect into  $\geq 70\%$  ethanol the following organs: liver, kidney, spleen, heart, brain.
  4. For **histology**, preserve tissues in formalin:
    - 4.1. For *fish smaller than 10cm*, remove one operculum and coelomic wall (Fig. 2) to allow penetration of preservative (watch <https://tinyurl.com/fish-pm-sml>).
    - 4.2. For *larger fish*, sample organs individually, but ensure they are no thicker than 1cm for best preservation (watch <https://tinyurl.com/fish-pm-lge>).
- \*Preserve samples in 10% neutral buffered formalin at a ratio of at least 1 part tissue to 10 parts fixative (Fig. 3).



Figure 1



Figure 2

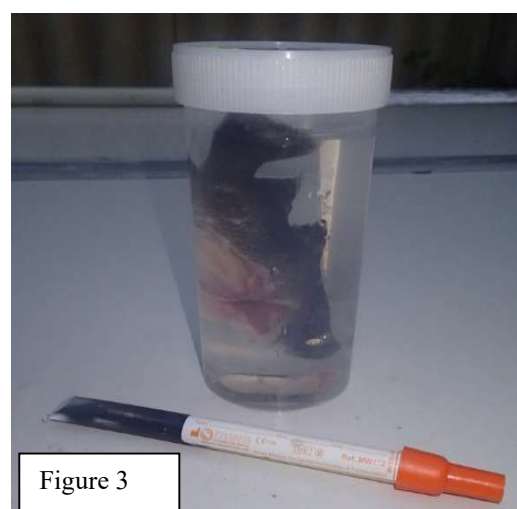


Figure 3



Small Fish Necropsy Procedure



Large Fish Necropsy Procedure







# Diagnostic Sampling Protocol - PRAWNS



The information provided below is for routine diagnostic investigation. For specific disease investigations call [TheFishVet](https://thefishvet.com.au).

## Sampling Shrimp

1. Choose representative sick shrimp to euthanase for sampling.  
Watch - <https://tinyurl.com/prawn-pm>
2. **Euthanasia** is by a two-step method:
  - 2.1. First, render the prawns unconscious and immobile by immersing into an ice slurry.
  - 2.2. Then, destroy their ganglia by using sharp-pointed scissors, and in a single motion, insert the scissor to make a ventral midline longitudinal incision along the entire length, between their pereopods (walking legs) (Fig. 1).
3. For **bacteriology**,
  - 3.1. use a needle and syringe to immediately draw haemolymph from the heart (Fig. 2) to transfer onto a bacterial swab and into transport media.
  - 3.2. Remove one gill cover and then make an incision on the lateral side to create a window into the thorax to swab the hepatopancreas (Fig. 3).
4. For **molecular biology** (PCR), sample into  $\geq 70\%$  ethanol the following:
  - 4.1. gills, hepatopancreas, the base of pereopods, pleopods, midgut, tail muscle.
5. For **histology** testing, preserve samples in Davidson's (preferable) or formalin:
  - 5.1. Inject approximately 0.1–0.2 mL of fixative into five different regions of the cephalothorax to improve tissue preservation, and reduce autolysis of internal organs. (Fig. 4).
  - 5.2. Preserve all parts of the shrimp into a jar with a sample to fixative ratio of at least 1:10

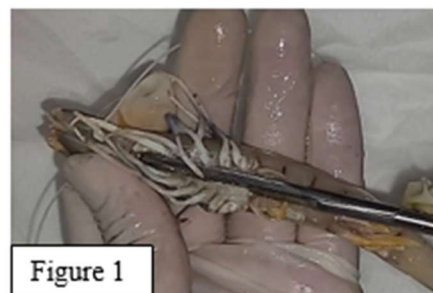


Figure 1

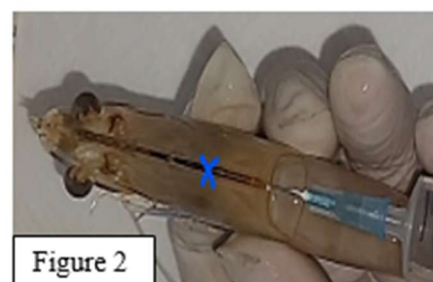


Figure 2

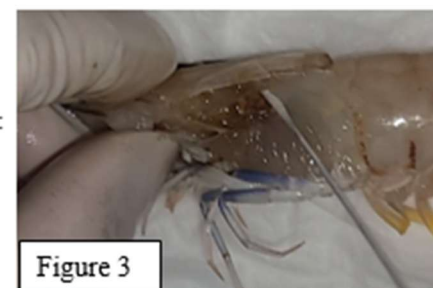


Figure 3



Figure 4







# Diagnostic Sampling Protocol - Abalone



The information provided below is for routine diagnostic investigation. For specific disease investigations call [TheFishVet](http://TheFishVet.com.au).

## Sampling Abalone

1. Use the QR code above for a video demonstration of the procedure.
2. Choose representative sick abalone to euthanase for sampling.
3. For **bacteriology**, use a needle and syringe to immediately draw haemolymph from the cephalic sinus (Fig. 1) and transfer onto a bacterial swab and into transport media (Fig. 2).
4. Shuck the abalone to free the body from its shell (Fig. 3).
5. For **molecular biology** (PCR), sample into  $\geq 70\%$  ethanol the following: gills, hepatopancreas, mantle, ganglia.
6. For **histology** testing, preserve samples in Seawater formalin:
  - 6.1. Depending on the size of the animal, inject  $\sim 0.2\text{ml}$  of fixative solution into five sites within the visceral mass to optimise fixation and prevent autolysis (Fig. 4).
  - 6.2. Preserve all parts of the abalone in a jar with a sample to fixative ratio of at least 1:10. Include the shell if possible.

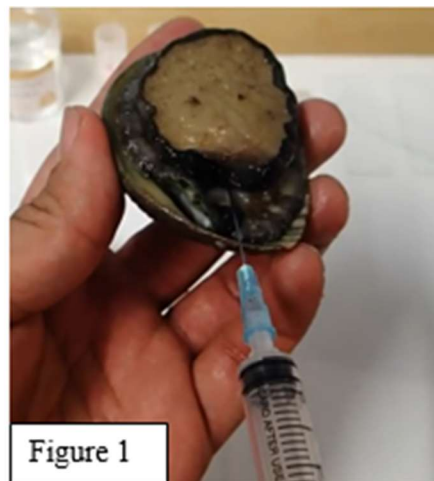


Figure 1

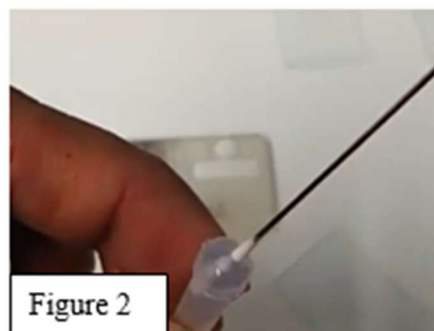


Figure 2



Figure 3



Figure 4







# Packaging & Posting Samples



Reference: Packaging and Posting Guide - <https://tinyurl.com/tfv-post>

## Fixation

Specimens should be fixed in 10% neutral buffered formalin for a minimum of 24 hours at room temperature.

Following adequate fixation, excess formalin may be decanted prior to transport, provided tissues remain fully fixed.

In emergency situations, samples may be sent in the formalin solution, provided they are in leak-proof sturdy containers that will not break or leak in transit.

## Primary and Secondary Containment

Fixed specimens must be triple-contained using leak-proof, sealed zip-lock bags.

Absorbent material sufficient to contain the entire volume of residual fixative must be included.

Samples must be enclosed within a rigid secondary container to prevent damage during transit.

## Sample Segregation

Bacteriology specimens must be packaged separately from formalin-fixed tissues and submitted to the client's local veterinary diagnostic laboratory.

Clients should request that all laboratory reports are copied to: [thefishvet@gmail.com](mailto:thefishvet@gmail.com)

## Transport and Notification

Samples preserved in formalin and ethanol should be dispatched via express postal to:

**Dr Richmond Loh**  
**The Fish Vet**  
**PO Box 5164**  
**East Victoria Park WA 6981**  
**Australia**

The submitting party must email the case history and tracking reference to [TheFishVet@gmail.com](mailto:TheFishVet@gmail.com) at the time of dispatch.





# Fish Vet Masterclass

## Online Training Course

A Masterclass that teaches you all aspects of fish veterinary medicine.

### Level Up Your Fish Vetting Skills.

The Fish Vet Masterclass is created by, Dr Richmond Loh, an American Board-Certified Fish Veterinarian and Veterinary Pathologist with 25 years of hands-on experience. This comprehensive course is easy to follow and will teach you how to diagnose and treat fish disease to the highest standards of fish veterinary medicine.

#### The Fish Vet Masterclass online course includes over 120 lessons;

- Fish Disease investigative process - 8 Lessons.
- Microscopes and Microscopy - 3 Lessons.
- Diet and Nutrition - 6 Lessons
- Water quality - 19 Lessons
- Viral Diseases of Fish - 6 Lessons
- Bacterial Diseases of Fish - 4 Lessons
- Algal infections in Fish - 3 Lessons
- Fungal and Oomycete Diseases of fish - 3 Lessons
- Protozoal Parasites of Fish - 10 Lessons
- Trematode (Fluke) Worm Infestations in Fish - 3 Lessons
- Nematode (round worm) Infestations in Fish - 2 Lessons
- Crustacean parasites of Fish - 2 Lessons
- Other Disease conditions - 14 Lessons
- Analgesia and Anaesthesia - 8 Lessons
- Surgical procedures - 15 Lessons
- Formulary of Fish Medications - 8 Lessons
- Biosecurity - 2 Lessons
- Welfare and Euthanasia - 4 Lessons
- Laboratory Testing and sampling - 2 Lessons
- Case Studies - 6 lessons+
- VIP Access for FVMc Facebook group for direct questions with Dr Loh



The Fish Vet



Certificate upon achieving a passing exam score

#### Fish Vet Masterclass



### Testimonials

#### Dr Harriet Woodhall - BVM&S CertAVP(ZM) MRCVS Advanced Practitioner in Zoological Medicine

I completed this course to go towards creditation for the WAVMA aquatic certification. It was extremely comprehensive, had a range of formats and everything was clearly explained in a logical way. I'm very happy it was recommended to me, it has given me an excellent foundation in fish medicine with practical applications to practice. Thank you!

#### Dr Sandri Jonker - Veterinarian (DVM)

Your course was absolutely awesome. It was like doing a paper at Uni, but the advice more practical and applicable. Excellent value for money. I think it's even helped me as a regular clinical vet.

#### Dr Karlee Hirakis - Certified Aquatic Veterinarian (BVSc CertAqV)

I thoroughly enjoyed the fish vetting masterclass. The lessons are just the right length, packed full of important information in an easy to understand manner. I particularly love how Dr Loh makes applying the scientific information to real life easy.

#### Dr Greta Van de Sompel - Certified Aquatic Veterinarian (DMV, CertAqV)

Very happy I follow this course! I'm a certified aquatic vet and always interested to learn about fish health. This course is a pearl for anyone who is interested in the health of fish!

For more info and testimonials visit: <https://fishvetmasterclass.com>

