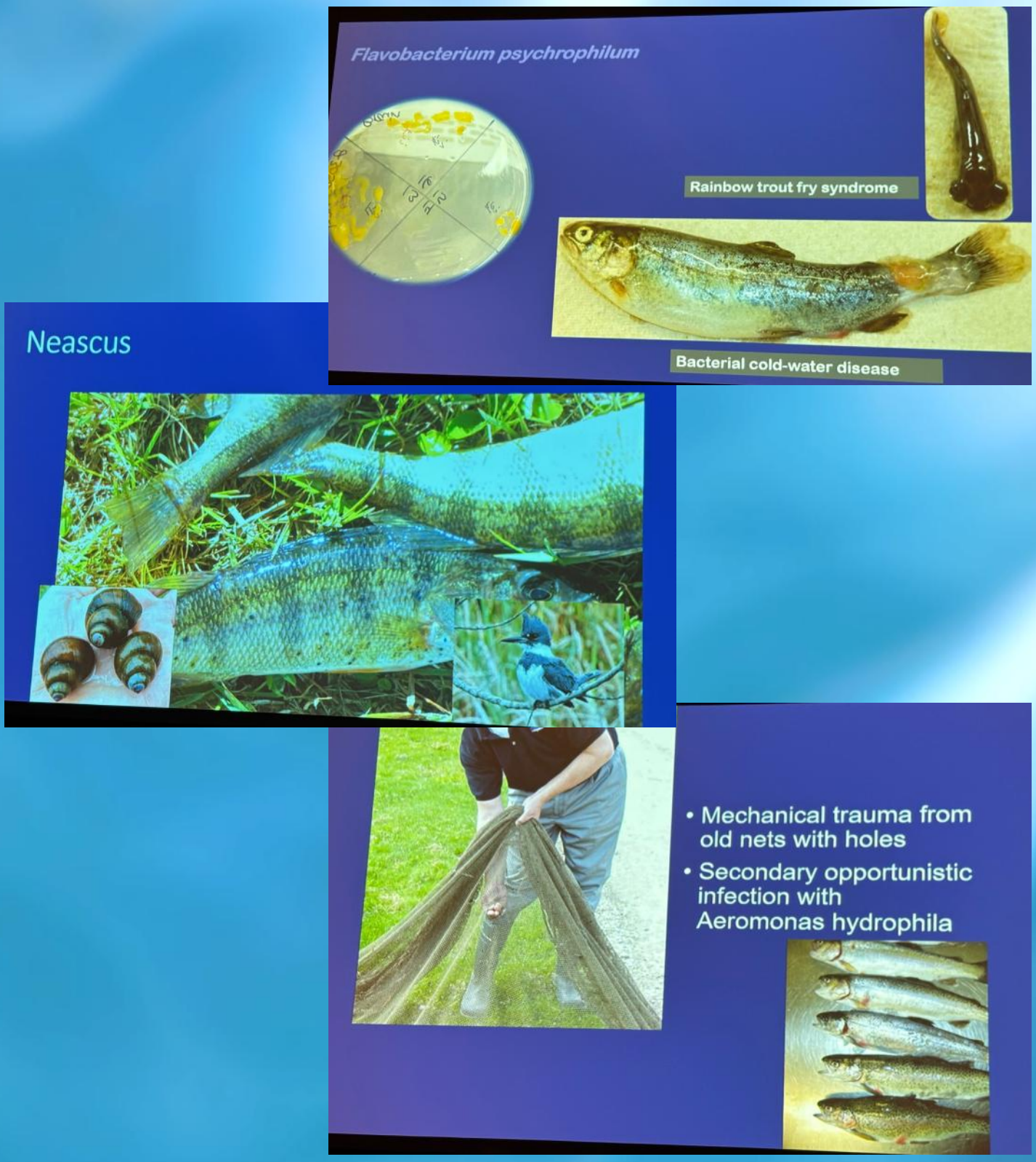
The Aquatic Veterinarian

Journal of the World Aquatic Veterinary Medical Association



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WHO ARE WE

MISSION

The Mission of the Association is to serve the discipline of aquatic veterinary medicine in enhancing aquatic animal health and welfare, public health, and seafood safety in support of the veterinary profession, aquatic animal owners and industries, and other stakeholders.

To fulfill this Mission, the World Aquatic Veterinary Medical Association has established the following:

Objectives

1. To serve aquatic veterinary medicine practitioners of many disciplines and backgrounds by developing programs to support and sustain members, and the aquatic species industries that they serve.
2. To identify, foster and strengthen professional interactions among aquatic medical practitioners and other organizations around the world.
3. To be an advocate for, develop guidance on, and promote the advancement of the science, ethics, and professional aspects of aquatic animal medicine within the veterinary profession and a wider audience.
4. To optimally position and advance the discipline of aquatic veterinary medicine, and support the practice of aquatic veterinary medicine in all countries.

The ideas presented in this publication express the views and opinions of the authors, may not reflect the view of WAVMA, and should not be implied as WAVMA recommendations or endorsements unless explicitly stated.

Information related to the practice of veterinary medicine should only be used within an established valid Veterinarian-Patient-Client Relationship.

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ISSN 2329-5562

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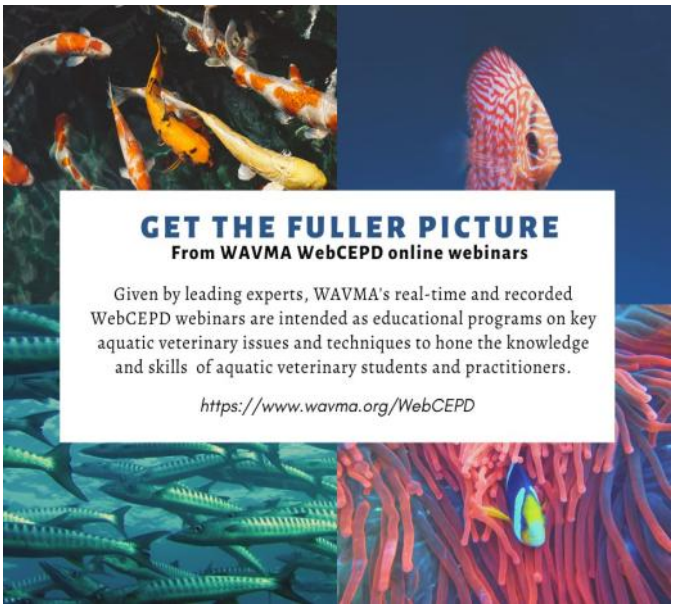
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Cover photos:

Photos by Nick Saint-Erne of slides from the lectures given by Dr. Myron Kebus at the AVMA Convention.

See pages 24-27 for an article about Dr. Kebus, and pages 14-15 for information about the AVMA/WVA conference in Washington, D.C.





Discover core knowledge, skills & experience needed to become a WAVMA Certified Aquatic Veterinarian *(CertAqV)*

Did you know that WAVMA's ***CertAqV Program*** offers members the opportunity to become recognized and certified as having competency in 9 core areas deemed necessary to practice aquatic veterinary medicine? Find out more information online at: http://www.wavma.org/CertAqV-Pgm.

EDITORIAL

Editor's Note—WAVMA Distinguished Fellows

On page 11 of this issue is the report by Dr. Urdes about choosing the 2025 WAVMA Distinguished Fellow. There is also a list of the current Distinguished Fellows with the year they were selected as a Fellow. The Distinguished Fellow Program was created in 2011 to recognize individuals whose involvement in WAVMA and aquatic medicine were exemplary. It might be worthwhile to reflect on the accomplishments of those who have been previously selected as a WAVMA Distinguished Fellow.

The achievements of these Fellows in our profession and their contributions to WAVMA are colossal. The first five Fellows were all founding members of WAVMA, collaborating in 2006 for its formation. Drs. Merrill and Roberts were the first two presidents, Dr. Tepper the fifth President. Drs. Walster and Scarfe would also serve as presidents of WAVMA, but they both served on committees when WAVMA was formed, and as Secretary. The 2013 Fellows were all active in aquatic medicine in North America and Europe from the early days of veterinary involvement, and Dr. Dusan Palic was the 2012 WAVMA President. Dr. Faisal was made a Fellow in 2016, and he was a previous President (2013) and, along with Drs. Palic, Saint-Erne, Miller-Morgan, Scarfe, Tepper, and Walster, he was instrumental in the formation of the Certified Aquatic Veterinarian Program.

Dr. Saint-Erne (2017 Fellow) was a founding member of WAVMA, former WAVMA Treasurer and President, and previous Chair of the Communications Committee and the Credentialling Committee, and editor of the WAVMA journal. Dr. Richmond Loh (2018 Fellow) was President in 2014 and is famous around the world for his YouTube channel, *The Fish Vet*. Drs. Urdes (2019 Fellow) and Dublin (2020 Fellow) are both past Presidents, and have been Chairs in committees, and Dr. Dublin also served as Secretary for five years.

Dr. Lewbart is a renowned aquatic veterinarian at the North Carolina State University College of Veterinary Medicine and has written several seminal books on Aquatic Animal Medicine. He was recognized for his contributions in 2021. Dr. Metselaar is Chair of the Credentialing Committee and was a WAVMA Director and President in 2024. Dr. Reichley was President in 2021 and was previously Secretary. Dr. Doherty was a WAVMA Director for several years and awarded a Distinguish Fellow in 2024, unfortunately passing away later that year.

All of these WAVMA members deserve our thanks for their contributions to the association and to Aquatic Veterinary Medicine in general. Being a Distinguished Fellow is a great honor, but also holds a responsibility to help guide WAVMA's future course.

Nick Saint-Erne, DVM, CertAqV
Executive Editor TAVeditor@wavma.org

Download a QR reader onto your Smart Phone and scan the Quick Response Code to the right. It will take you to the WAVMA.org website page for accessing all of the past WAVMA Newsletters.

You will need your WAVMA User ID and Password to access the most recent issues of *The Aquatic Veterinarian.*

The latest editions are available for download at https://www.wavma.org/TAV-Current-Issues.

Past years' editions are available for download at https://www.wavma.org/TAV-Archives.

The Aquatic Veterinarian

The Quarterly Magazine of the World Aquatic Veterinary Medical Association

Consider promoting your products, services or programs to aquatic veterinarians, veterinary students, nurses & paraveterinary professionals throughout the world

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Full page (~7" x 9")	$100	$50
1/2 page (~7" x 4.5") **or 1 column** (3.5" x 9")	$60	$30
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WAVMA Members can place a free 1/8 page (business card size) advertisement in the TAV. Contact TAVeditor@wavma.org for information on advertising and payment options.

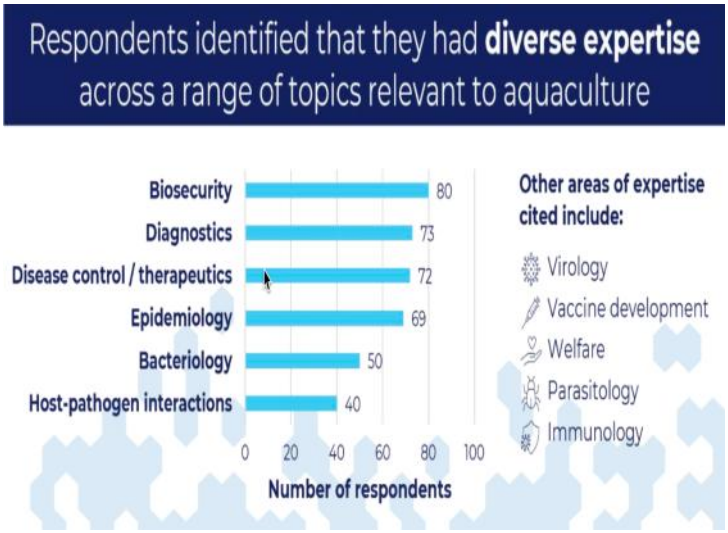
EXECUTIVE REPORTS

President's Report

Dear WAVMA Members,

As the current WAVMA President, I was one of the contributors to the successful Aquaculture Health Research Workshop held at the World Organisation for Animal Health (WOAH) headquarters in Paris on 20-21st February this year.

During the meeting, leading experts from around the world discussed key challenges/topics facing aquaculture including finfish health, emerging diseases, AMR, diagnostics, vaccines, and biosecurity, and sustainable aquaculture solutions. The results of this workshop have been compiled to produce three reports available from the International Research Consortium on Animal Health website (STAR IDAZ) or the STAR DIAZ LinkedIn page.



Aquaculture Biosecurity and Fish Welfare are two important topics that we can address as Aquatic Veterinarians. Ethical Seafood Research (https://ethicalseafoodresearch.com) gave a talk based on the welfare of Nile tilapia farming in Egypt at the recent Fish Veterinary Society Spring Meeting (May 2025). The talk provided some interesting points on how to engage farmers on welfare.

Recently they published this article on LinkedIn: "Can aquaculture improve fish welfare without compromising farmers' bottom line?" The link provides access to the full article, whilst the article also provides access to the papers/blog they published on their findings, which I think are open access:

- "Farmed fish welfare in Egypt: Surveying current practices and future directions for tilapia culture"
- "Improving Tilapia Welfare at Harvest: Piloting Innovative Approaches in Egyptian Aquaculture" (blog)
- "The welfare of farmed Nile tilapia: a review"



With the recent WAVMA WebCEPD webinar B-1092: Aquaculture Biosecurity, Date: May 28, 2025 Presenter: Myron Kebus, M.S., DVM; and B-1093: From Concepts to Practices: Introducing Tilapia Welfare Assessment Tools, Date: July 2, 2025, Presenters: Mr Wasseem Emam, Dr Sara Barrento, Mr Murilo Quintiliano; the following thought came to mind. I'm happy that welfare and biosecurity are linked - through improved health. Would you therefore agree/disagree with the following?

- As veterinarians we are all convinced that welfare and biosecurity both provide for better animal health and an improved bottom line for the farmer?
- This is achieved through better health and therefore increased production, whilst still using the same amount of resources?
- As veterinarians it seems we struggle to encourage farmers of these benefits and get them to introduce better welfare and good biosecurity practices?
- Would it be better to focus on welfare, which both farmers and the public have a better understanding of, and introducing biosecurity measures through the lens of welfare?

What are your thoughts on how we as Aquatic Veterinarians can improve both biosecurity and fish welfare?

Nelly Isyagi
President@wavma.org
WAVMA President
(Uganda)

EXECUTIVE REPORTS

WAVMA Listservs - what they are and how to use



WAVMA operates two listservs:
WAVMA_Members-L@wavma.org
WAVMA_Student-L@wavma.org.

All members can join both listservs by logging into their WAVMA Profile (membership) - Click on *My Profile* top right of the website to login (need your membership email and password). Only current members have access to the system. Open the *Preferences* tab and scroll down to the Check boxes under "Your e -Communication Subscriptions". E-news uses an opt out system although you're advised to keep this checked. The listservs are an opt-in. Check the appropriate boxes and then click *Save*. You are now subscribed to whichever option. Members-L provides a digest option that goes out weekly for those of you with overflowing inboxes.

The listserv are the preferred channels for WAVMA to contact members with news and updates. They also allow members to discuss such things as cases with their peers. All subject lines automatically start with the listserv name e.g., WAVMA Members-L: for ease of recognition. You just need to add what the email is about. Also remember to sign off with your name or appropriate signature, otherwise the email does not identify who you are. Of course you could stay anonymous if you've got a question to ask that you feel uncomfortable about.

For various reasons only 55% of WAVMA members have subscribed to the lists (probably as it is an opt-in system) and it can be quite difficult to spot if you are or are not subscribed without looking, since emails can be intermittent. But if you want to stay informed on WAVMA happenings or discuss things with a global audience, then you should opt-in.

Whilst the system is easy to use from WAVMA's perspective - it is the easiest way to communicate with members without being seen as a "spam emailer" as each email will reach several hundred email accounts from one user, which can be a red flag for email providers. However, for members there are some rules you need to follow:

- Make sure your membership email is up to date.
- Make sure the address is added to your "safe senders" list.
- Do not add more than two or three hyperlinks in the email or it might be seen as spam and blocked by the WAVMA email provider.

Not following the above may mean you are automatically removed from the listservs. WAVMA Admin is typically informed if this is the case, but not always, so removals can be hard to spot from WAVMA's end, plus an administrative hurdle as there needs to be an assessment of whether it is safe to add the address back (for spam reasons). The usual reason for removal is due to too many "bounces," in other words the email cannot be received. This is due to the first two reasons.

As well as "removals" occasionally the system does not synchronise correctly. This is because two separate servers are used - the WAVMA servers and the email provider server. Together they decide who should be included in the list. It can be summarised as the two servers do not speak nicely to each other. WAVMA has no notification if this occurs.

Most members only realise they are no longer subscribed when they attempt to send to the lists - they will not be able to. The easiest way to remedy if you believe you're not subscribed is:

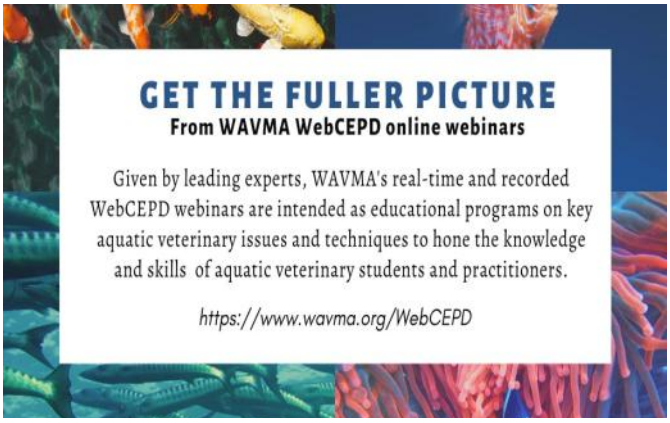
- Make sure you've followed the above rules
- Look whether the appropriate boxes are ticked or not in your Preferences tab. If not, tick and save.

If they are ticked, untick and save, then re-tick and save. This will resynchronise the servers.

WAVMA would like all members to be included on the listservs. It is the easiest way to communicate with all members.

Regards,

Chris Walster BVMS MVPH CertAqV MRCVS
WAVMA Administrative Coordinator



EXECUTIVE REPORTS

WebCEPD Program

Since 2013, WAVMA has produced over 180 Webinars that are available to watch on our website: https://www.wavma.org/WebCEPD, and conference recordings on the Video page: https://www.wavma.org/video-library.
You may be able to use these for continuing education credit for veterinary licensing, and you will also sure learn a lot!

Lectures are given by leading experts, and WAVMA's WebCEPD webinars are intended as educational programs on a variety of aquatic health issues and veterinary techniques to hone the knowledge and skills of aquatic veterinarians and veterinary students. To earn Continuing Education and Professional Development (CEPD) credit, you will need to complete a short Knowledge and Skills Assessment (KSA) to ensure you have met the learning objectives. On successful completion, you will receive a CEPD Certificate, which may be useful for licensure/registration to practice veterinary medicine and to earn credit towards becoming a WAVMA Certified Aquatic Veterinarian.

Recent WebCEPD available on the WAVMA.org website include:

B-1089 “Fish ER Medicine”
January 30th
by Dr Robert Martinez (USA).

B-1090 “Biotechnological strategies to avoid antibiotic use in managing bacterial infections in farmed freshwater fish”
February 27th by Dr Paola Barato (Colombia).

B.-1091 “Cetacean stranding response”,
April 30th
by Dr Natalie Arrow (UK).

B-1092: Aquaculture Biosecurity
Date: May 28, 2025
Presenter: Myron Kebus, M.S., DVM

B-1093: From Concepts to Practices:
Introducing Tilapia Welfare Assessment Tools
Date: July 2, 2025
Presenters: Mr Wasseem Emam, Dr Sara Barrento, Mr Murilo Quintiliano

See these webinars and more at:
https://www.wavma.org/WebCEPD

WAVMA's Member Programs and Services

Find a Fish Vet Directory - a directory for the public to find aquatic veterinarians

Member Directory - a members-only tool to locate other members and for vet students to locate mentors

The Aquatic Veterinarian - a quarterly publication with news, peer-reviewed contributions, clinical cases, jobs, meetings and more

Certified Aquatic Veterinarian (CertAqV) Program - a program identifying and certifying veterinarians with competency in core subject matter necessary for practicing aquatic veterinary medicine

WebCEPD Program - live and recorded webinars, courses, and presentations;; many are available for CEPD credit

John L. Pitts Aquatic Veterinary Education Awards Program - an international program that provides financial support for veterinary students and new graduates to increase their experience in aquatic veterinary medicine

Employment Opportunities - a list of available aquatic veterinary jobs, available to members only

Image Library - a collection of images useful for presentations, diagnostic interpretations, and more

Video Library - a collection of videos to help members and others understand aquatic veterinary techniques and issues

WAVMA Student Chapters - WAVMA chapters formed by veterinary students and faculty mentors at veterinary schools and colleges around the world

Members-L - (WAVMA_Members-L@.wavma.org). A members-only listserv for discussions on any topic of interest. To post to it, you must be a current member and ticked the appropriate box in your Member Profile Preferences tab.

Students-L - (WAVMA_Student-L@wavma.org). A discussion listserv for WAVMA student members. you must be a current member and ticked the approrpiate box in your Member Profile Preferences tab.

Leadership Roles - All members (including students) have the opportunity, and are encouraged, to serve on any WAVMA Committee. All full members may also be nominated for a position on the Executive Board. If you are interested in more information, please contact the WAVMA President.

COMMITTEE REPORTS

Credentialing Committee

The WAVMA Aquatic Veterinarian Certification Program identifies the core competency or subject matter areas needed to practice aquatic veterinary medicine, and recognizes those veterinarians who have acquired the necessary knowledge, skills and experience (KSE) from a variety of sources. It is over 10 years since WAVMA introduced the CertAqV and since then hundreds of veterinarians around the world have achieved the qualification. Originally the process was manual, but during 2023 WAVMA introduced an online system and also the CertAqVNT for veterinary nurses and technicians. Currently around 30 VN's/VT's have signed up for the certificate, with 11 having achieved the qualification. It is a globally recognized qualification.

The certificates demonstrate to your employer that you have achieved the competence of at least a new graduate, with each of the modules reflecting the areas needed to be competent in aquatic veterinary medicine.

Recently, WAVMA updated the online system to make it easier for all to complete the process, in response to user comments. Most of these changes are visual, making it easier to see where you are in the process. There were also changes to the logic and automation of the system which had caused some confusion among reviewers. Overall, these changes will enhance all users experience of the system.

Whilst the changes were tested first before going live, the real world can throw in some unknowns. If you are currently going through the process and have any questions then please contact the WAVMA Administrators for advice or use the Contact Us page on the website.

All current CertAqV and CertAqVNT are listed on the appropriate pages of the WAVMA website as well as all the information you need to decide if the certificate is right for you. If you are interested in aquatic veterinary medicine, wherever you are in your career, whether student, recently qualified, wishing to take a change in career direction, or simply interested in adding to your knowledge, then the certificates are well worth looking at.

If you have questions about the Certification process, please send me an email, or refer to the website: How to use the automated CertAqV, CertAqVNT system.

Dr. Matthijs Metselaar DVM PhD CertAqV MRCVS
Credentialing Committee Chair
CertAqV-Admin@wavma.org

Certified Aquatic Veterinarians

The following individuals are current Certified Aquatic Veterinarians.

Ali Anwar Ahmad (Singapore)
Jessica Allen (United States)
Sara Alves (United States)
Carrick Anderson (Iceland)
Huay Min June Ang (Singapore)
Brian Anton (United States)
Farah Gonul Aydin (Turkey)
Benjamin Balducchi (Canada)
Guadalupe Bárcenas Pazos (Mexico)
Madison Barnes (United States)
Christa Barrett (United States)
Trista Becker (United States)
Jenice Bell (United States)
Ainjil Bills (United States)
Heather Bjornebo (United States)
James Bogan (United States)
Pierre-Marie Boitard (France)
Tessa Brown (United States)
Clara Camargo (Saint Kitts and Nevis)
Shraddha Cantara (United States)
Ri Chang (United States)
Bryony Chetwynd-Glover (United Kingdom)
Prakan Chiarahkhongman (Thailand)
Dana Clark (United States)
Mike Corcoran (United States)
David Craton (United States)
Rebecca Crawford (United States)
Hannah Dadah (United States)
Amanda Day (United States)
Zarah Deutsch (United States)
Nguyen Dinh-Hung (United States)
Darren Docherty (United Kingdom)
Christina Dover (United States)
Devon Dublin (Japan)
Antonella Fabrissin (Italy)
Julie Fithian (United States)
Emmanuelle Furst (United States)
Jennifer Go (Hong Kong)
Christopher Good (United States)
Bartolomeo Gorgoglione (United States)
Krystan Grant (United States)
John Griffioen (United States)
Miguel Grilo (Portugal)
Katharina Hagen-Frei (Switzerland)
Beni Halalludin (Indonesia)
Alex Hall (United States)
Katharine Hausmann (United States)
Jenny Herbert (United States)
Karlee Hirakis (Australia)
Carolina Hislop (United Kingdom)
Kelsey Hoag (United States)
Noémie Hofman (France)
Aivee Huynh (Australia)
Adrien Izquierdo (United States)

COMMITTEE REPORTS

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Sharmie Johnson (United States)
Jimmy Johnson (United States)
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Elizabeth Kaufman (Israel)
Denyse Khor (Singapore)
Jennifer M. Kishimori (United States)
Jack Kottwitz (United States)
Lana Krol (United States)
Tamara Kruse (United States)
Lucinda (Wing Sze) Lam (Australia)
David Landers (United States)
Vivian Lee (United States)
Eric Littman (United States)
Juan-Ting Liu (Taiwan)
Richard Lloyd (United Kingdom)
Salina Locke (United States)
Richmond Loh (Australia)
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Jordi Lopez-Ramon (Spain)
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Paul Manesis (Canada)
David Marancik (Grenada)
Shelly Marquardt (United States)
Robert Martinez (United States)
John Mastrobuono (United States)
Colin McDermott (Hong Kong)
Alicia McLaughlin, DVM, CertAqV (United States)
Margaret McTighe (United States)
Matthijs Metselaar (United Kingdom)
Timothy Miller-Morgan (United States)
David Minich (United States)
Haitham Mohammed (United States)
Katrina Murray (United States)
Kunda Ndashe (Zambia)
Lucie Nedved (Australia)
Jenifer Nix (United States)
Sally Nofs (United States)
Ladislav Novotny (Czech Republic)
Alec Ortiz Colosi (United States)
Courtney Pace (United States)
Dusan Palic (Germany)
Michael Palillo (United States)
Veronica Pardini (United States)
Sarah Pellett (United Kingdom)
Mattison Peters (United States)
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Jan Raines (United States)
Faith Ramsey (United States)
Amanda Rappaport (United States)
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Lucy Robson (United Kingdom)
Patinan Rookkachard (Indonesia)
Justin Rosenberg (Canada)
Benjamin Rosenbloom (Saint Kitts and Nevis)
Jennifer Russell (United States)
Daniel Ruvolo (United States)
Komsin Sahatrakul (United Arab Emirates)
Nicholas Saint-Erne (United States)
Sonja Saksida (Canada)
Maria Eugenia Sancho Santos (United States)
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Lindsey Waxman (United States)
Michael Wenninger (United States)
Laura Whalen (United States)
Harriet Woodhall (United Kingdom)
Sarah Wright (United States)

Students (and others) are encouraged to gain KSE towards the CertAqV prior to applying for the CertAqV. However, the requirements of CertAqV mean students need to have reached the requisite KSE (150 KSE minimum) within one year of application and have graduated as a licensed/registered veterinarian in your country within the one-year time period.

Click here for a list of CertAqV resources.
https://www.wavma.org/media/Documents-for-download/250623-CertAqV-Resources.pdf

This list is not exhaustive.
Please consult with your mentor.

COMMITTEE REPORTS

WAVMA Committees

As a member-driven organization, WAVMA relies on volunteers to help implement programs useful for all members. Any WAVMA member can volunteer on a Committee to help shape the direction of the Association, meet new colleagues, forge valuable and lasting relationships, and help address key issues affecting aquatic veterinary medicine today. To find out more about serving on a Committee, please contact the Committee Chair or the WAVMA Secretary.

Communications Committee
This Committee manages the communications among members and others involved with aquatic veterinary medicine. It oversees the e-News, Facebook, Twitter, LinkedIn and other social media accounts.
Chair: Claudia Venegas, Secretary@wavma.org

Credentialing Committee
This Committee oversees and administers the CertAqV Program for credentialing aquatic veterinary practitioners, and evaluates aquatic veterinary educational programs useful to members.
Chair: Matthijs Metselaar CertAqV-Admin@wavma.org

Education & Students Committee
This Committee facilitates networking between student members and helps development of educational programs and services. It is composed of three subcommittees: WebCEPD, Education Resources, and Student Support.
Chair: Bartolomeo Gorgoglione, BartGorg@msu.edu

Meetings Committee
This Committee oversees and coordinates logistics for WAVMA-organized or sponsored aquatic veterinary educational meetings, including the Annual General Meeting.
Chair: Julius Tepper, cypcarpio@aol.com

Membership Committee
This Committee oversees membership issues to optimally serve members and the organization. It oversees the listservs and membership lists.
Chair: Chris Walster, Administrators@WAVMA.org

Publications Committee
This committee oversees the publication of WAVMA's quarterly journal, *The Aquatic Veterinarian*, and other occasional publications.
Chair: Nick Saint-Erne, TAVeditor@WAVMA.org

A variety of items (mugs, t-shirts, hoodies, bags) are available for purchase at WAVMA's Store.

Items in the Zazzle store can be purchased in a variety of sizes, colors, and can even be customized to include your name, clinic name, or to include WAVMA Student Chapter information. For help with customization, please contact the WAVMA Administrator.

https://www.zazzle.com/store/wavma788

WAVMA Shop

A number of WAVMA branded items (including shirts, mugs, caps) are available at the WAVMA Store. Get yours today!



Go to: http://www.wavma.org/Shop



COMMITTEE REPORTS

Fellows Advisory Council Annual Report

The subcommittee of the Fellows Advisory Council finalized in May the evaluation of the applications for the 2025 WAVMA Distinguished Fellow Award. In total, six nominations were received during this period. The selection criteria include, but are not limited to, the following:

1) Candidate to have brought significant contributions to WAVMA and its mission;
2) Candidate to be a member in good standing;
3) Candidate to have contributed substantially to the advancement of clinical practice, teaching, research or any other area of aquatic veterinary medicine considered relevant by the nominator.

The names of the highest ranked candidates were forwarded to the Council members for voting. Subsequently, the candidate with the highest number of votes is to be recommended to the Executive Board as the Distinguished Fellow of the year 2025. The winner will be announced at the Annual General Meeting (AGM 2025).

Laura Urdes, PhD DVM CertAqV
Fellows Advisory Council Chair

Fellows Advisory Council

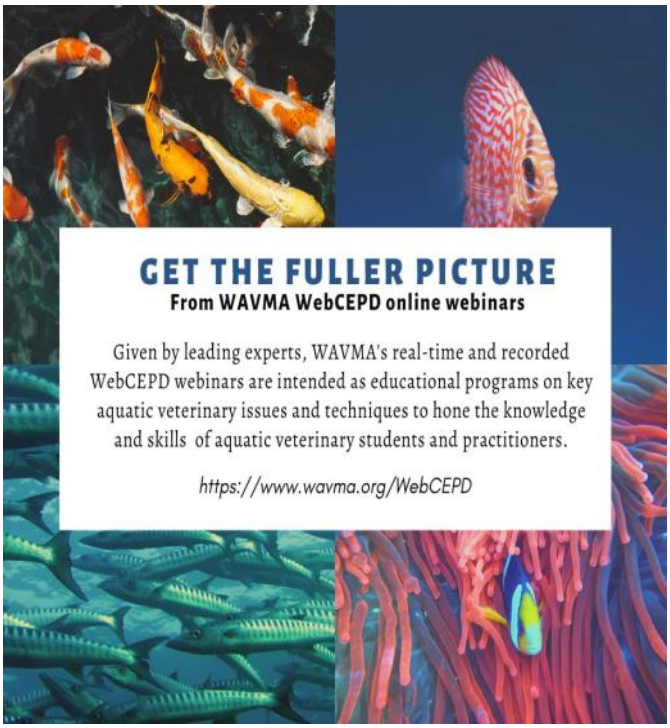
A WAVMA Distinguished Fellow is someone who has conferred on them the honorific: *WAVMA Distinguished Fellow*. The Fellows Advisory Council is composed of WAVMA Distinguished Fellows who are current WAVMA members and who wish to contribute to the development of WAVMA. The Chair of the Fellows Committee will be the Fellows Representative to the Executive Board.

WAVMA Distinguished Fellows are:

Peter Merrill (2012)
Ronald Roberts (2012)†
David Scarfe (2012)
Julius Tepper (2012)
Christopher Walster (2012)
Grace Karreman (2013)
Marian McLoughlin (2013)
Dusan Palic (2013)
Mohamed Faisal (2016)
Nicholas Saint-Erne (2017)
Richmond Loh (2018)
Laura Urdes (2019)
Devon Dublin (2020)
Gregory Lewbart (2021)
Matt Metselaar (2022)
Stephen Reichley (2023)
Simon Doherty (2024)†

Laura Urdes, PhD DVM CertAqV
Fellows Advisory Council Chair





COMMITTEE REPORTS

WAVMA Student Chapter Guidelines

To initiate a new Student Chapter, download the *WAVMA Student Chapter Guidelines*
A Spanish version of the Student Chapter Guidelines can be *downloaded from the WAVMA website.*

Examples of available Student Chapters programs:

- Assistance in organizing and promoting Chapter programs and activities.
- MiniGrants of up to $500 USD are available to assist official WAVMA Student Chapters with conducting activities intended to engage students in opportunities related to aquatic veterinary medicine. Download the Flyer here and the application form here.
- Access to recorded webinars and live web-based presentations from experts around the world.
- Low annual WAVMA Student Membership ($25)
- 50% Chapter member's dues may be available to support Chapter-organized activities. Get more information here and a Spanish version here.
- Reduced rate (50% off) WAVMA Full Membership the year after graduation.
- John L. Pitts Aquatic Veterinary Education Awards Program
- Access to the latest editions of WAVMA's quarterly journal, *The Aquatic Veterinarian*.
- Access to WAVMA member-only webpages.
- Aquatic veterinary externship and job listings.
- Participation in the WAVMA Certified Aquatic Veterinarian (CertAqV) Program.
- Access to WAVMA e-mail listservs, including Members-L, and Student-L.

A list of all current WAVMA Student Chapters is available on the website:
https://www.wavma.org/WAVMA-Student-Chapters

Consider joining the ***WAVMA Chapter Facebook Group*** to find out what's happening in other Chapters.

TO SUPPORT FUTURE STUDENT SCHOLARSHIPS,
PLEASE MAKE A DONATION TODAY
TO THE SCHOLARSHIP FUND!

WWW.WAVMA.ORG/SCHOLARSHIPS.

WAVMA Student Chapters

University of Pretoria, Onderstepoort Faculty of Veterinary Science, South Africa (established 2017)

Murdoch University, School of Veterinary & Life Sciences, Australia (established 2014)

University of Sydney, School of Veterinary Science, Australia (established 2014)

Auburn University, College of Veterinary Medicine, USA (established 2013)

Colorado State University, College of Veterinary Medicine & Biomedical Sciences, USA (est. 2019)

Cornell University, College of Veterinary Medicine, USA (established 2019)

Michigan State University, College of veterinary Medicine, USA (established 2021)

Mississippi State University, College of Veterinary Medicine, USA (established 2014)

The Ohio State University, College of Veterinary Medicine, USA (established 2018)

Oregon State University, College of Veterinary Medicine, USA (established 2017)

Ross University, School of Veterinary Medicine, St. Kitts & Nevis, West Indies (established 2015)

St. George's University, School of Veterinary Medicine, Granada, West Indies (established 2018)

University of California, Davis School of Veterinary Medicine, (Established 2020)

University of Florida, College of Veterinary Medicine USA (Established 2013)

University of Georgia, College of Veterinary Medicine, USA (established 2015)

University of Illinois, College of Veterinary Medicine, USA (established 2018)

University of Pennsylvania, School of Veterinary Medicine, USA (established 2020)

Western University of Health Sciences, College of Veterinary Medicine, USA (established 2014)

University of Edinburgh, Royal (Dick) School of Veterinary Studies, Scotland UK (established 2020)

University of London, Royal Veterinary College, England UK (established 2021)

Ankara University, Faculty of Veterinary Medicine, Turkey (established 2022)

Makerere University College of Veterinary Medicine Animal Resources and Biosecurity (established 2022)

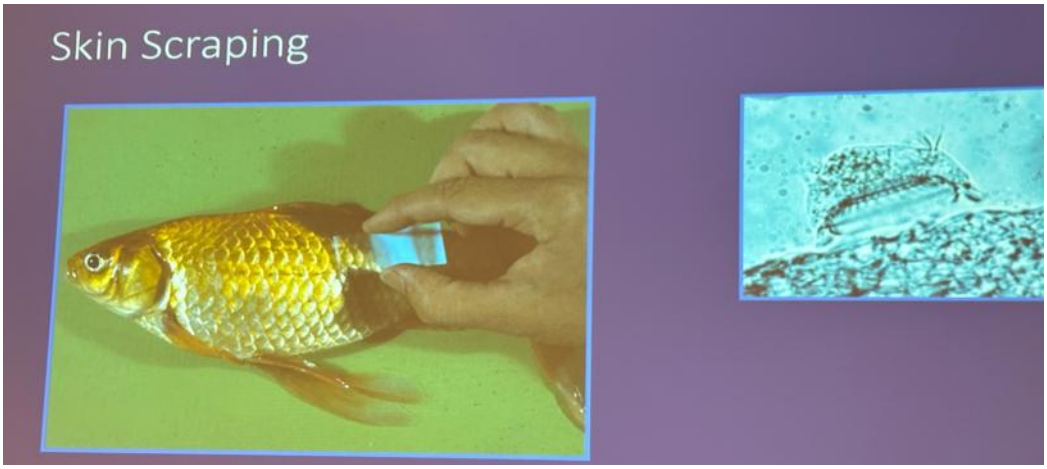
St. Matthew's University School of Veterinary Medicine West Bay, Cayman Islands (established 2022)

University of Bristol, Bristol Veterinary School, England (established 2023)

University of Calgary, Canada (established 2023)



Veterinary students at Murdoch University attending their booth at the Special Interests Group event to get more Veterinary Students interested in Aquatic Veterinary Medicine.



Photograph of collecting a skin scrape biopsy on a fish, along with a photo of Trichodina protozoa seen on microscopic examination of the sample.

Image taken from lecture by Dr. Myron Kebus at the AVMA Convention.
See pages 14-15.

CONFERENCE REPORT

American Veterinary Medical Association Convention and World Veterinary Association Congress — July 2025





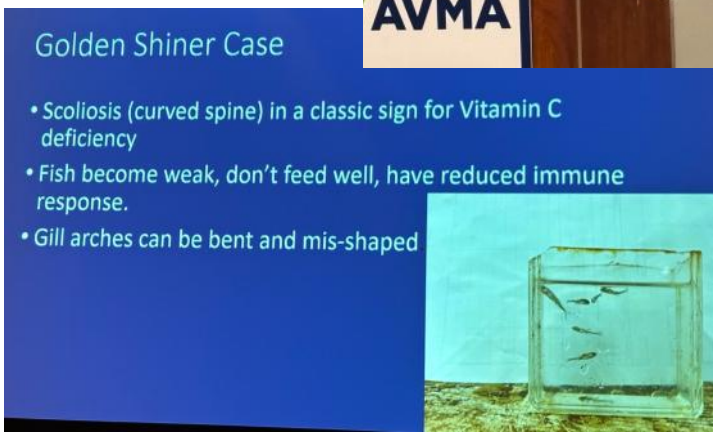
On July 18-22, in Washington, D.C., USA, the AVMA and WVA had their joint conferences. There were two days of lectures on Aquatic Veterinary Medicine organized by the American Association of Fish Veterinarians. These lectures were presented on Saturday and Sunday. They were given by Jessica Sanders, Myron Kebus and Jessica Koppien-Fox.



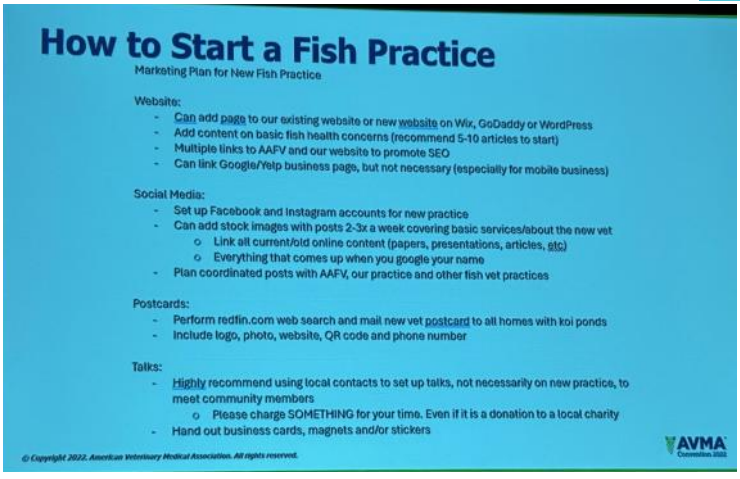
On Saturday afternoon, Jessica Sanders conducted three lectures: The Business of Pet Fish Medicine, Surgery in Pet Fish, and See this Fish: Triage for Fish Patients.

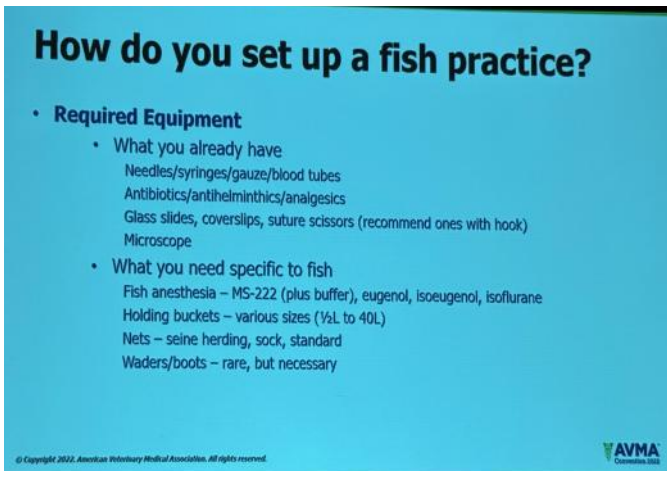
The Aquatic program continued on Sunday morning, with Myron Kebus giving two lectures: What Fish Farmers Expect Veterinarians to Provide, and Fish Farm Cases—What You May See and Be Asked to Diagnose and Treat. Also on Sunday, Jessica Koppien-Fox finished the sessions with two lectures: Nitrites, Nitrates, Ammonia, Oh My! (Water Quality Essentials), then Finding your Fins! Training Opportunities in Aquatic Animal Medicine











CONFERENCE REPORT



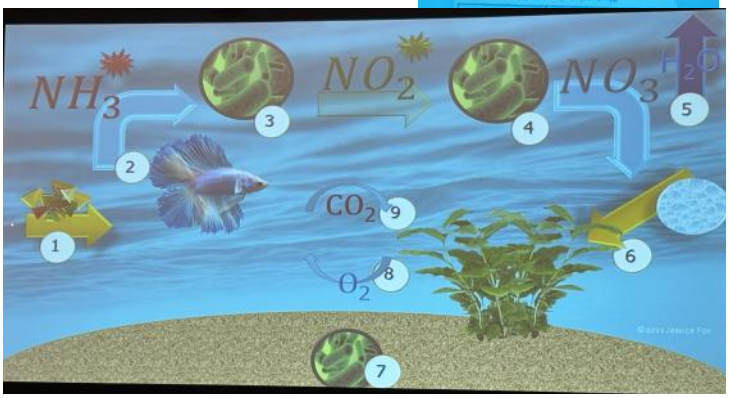




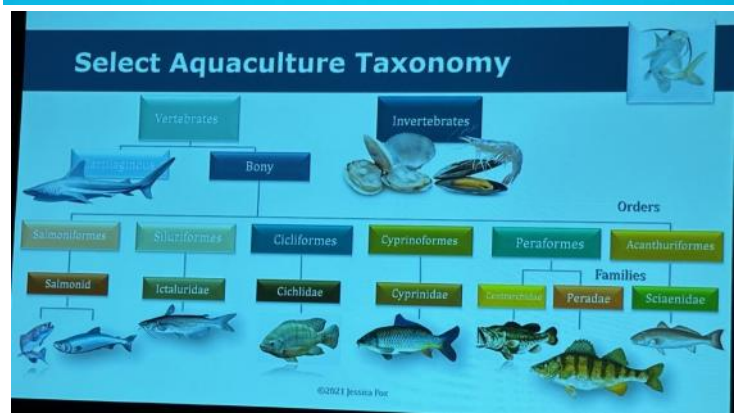


Above:
Salmon carved from walrus ivory by an Innuit, seen at the National Museum of American Indians.

Below:
St. Anthony preaching to the fishes in Foligno, Italy; mural seen at the Cathedral of St. Matthew the Apostle, in Washington, D.C.









STUDENT REPORTS

Makerere University WAVMA Student Chapter report on the *WORLD AQUACULTURE SAFARI 2025 CONFERENCE: 'Aquaculture on the Rise'*

The World Aquaculture Safari 2025 conference, held from June 24th to 27th at Speke Resort Munyonyo, Entebbe, Uganda, provided an invaluable platform for students, professionals, and stakeholders in the aquaculture and veterinary sectors to exchange knowledge, explore innovative practices, and foster collaboration across borders. As representatives of the Makerere University Students Chapter of the World Aquatic Veterinary Medical Association (WAVMA), our group of ten managed to attended this prestigious event, thanks largely to the support and effort of Dr. Isyagi Nelly, whose efforts and generosity in providing tickets enabled our participation.



The students presented orally and posters. In addition, the WAVMA students manned the WAVMA Stall in shifts, as others attended different sessions as shown below.



Figure 1: MAK-WAVMA Student Lokwii Monica manning the WAVMA Stall during the Aquaculture Safari.

The conference was a dynamic gathering that featured a wide array of range, workshops, and networking opportunities. Our delegation engaged actively in sessions covering diverse topics such as policies, regulation and governance of aquaculture, aquatic animal health, women in aquaculture, and integrated rice-fish farming systems among others, which not only broadened understanding of current challenges and innovations but also inspired us to see the potential of our field as veterinary students in contributing to sustainable aquaculture development



Throughout the event, we had ample opportunities to network with international colleagues, industry leaders, researchers, and policymakers. This exposure highlighted the importance of cross-disciplinary collaboration, especially for African countries striving to improve aquaculture practices and policies. The conference provided a platform to learn about advancements and challenges faced by African countries, emphasizing the need for solutions and capacity building.

Participation in the World Aquaculture Safari 2025 conference presented a valuable opportunity for the WAVMA student chapter, offering several notable strengths. Top of the list was the representation of student voices on a global platform, exposure to cutting-edge research and innovations, and rich networking opportunities with international experts and peers. This engagement significantly boosted motivation and broadened perspectives on career paths within aquaculture and veterinary medicine.

However, certain limitations were also evident. Access to some sessions and networking events was restricted to full members, and the financial and logistical challenges commonly faced by student delegates were present. Additionally, limited prior exposure to high-level international conferences posed an initial barrier to full engagement.

Despite these challenges, the conference revealed numerous opportunities. Key among them were the prospects for international collaborations, the application of knowledge to improve local aquaculture practices, and advocacy for increased student representation in future events. Moreover, the insights gained offer a foundation for influencing policies that support sustainable aquaculture in Africa.

Our participation in the World Aquaculture Safari Conference 2025 marked a significant moment in our academic and professional development. It deepened our understanding of the field and strengthened our resolve to actively contribute to the growth of aquaculture and veterinary medicine within our communities, particularly in the African context.

We extend our heartfelt gratitude to Dr. Isyagi Nelly and Dr. Kahwa David for their unwavering support, which made this experience possible. Moving forward, we recognize the value of sustained engagement, targeted capacity building, and inclusive participation to maximize the impact of such global events.

STUDENT REPORTS

WAVMA Student Field Training Report in Aquatic Diagnostics Conducted on 28th June 2025 as Part of World Aquaculture Safari 2025

Prepared by:
WAVMA Student Chapter – Makerere University

Aquatic veterinary medicine is a relatively underexplored field in Uganda, especially among veterinary students. The limited exposure and hands-on training in aquatic diagnostics present a challenge in managing the rising demand for fish health services as aquaculture continues to expand. In response to this gap, a one-day intensive field training was organized on Saturday, 28th June 2025. The session was led by a team of highly experienced facilitators including Dr. Nelly Ishagi and Dr. David Kahwad. The training commenced at the Kampala Capital City Authority (KCCA) Demonstration Farm in Kyanja, followed by practical laboratory work at the Animal Biosafety Laboratory (ABL), Makerere University.



Figure 1: Students from Makerere WAVMA student chapter with their instructors (Dr. Nelly Isyagi, Dr. Kunda Ndashe and Dr. David Kahwa) at Kyanja KCCA.

The training activities were divided into two major components: on-farm training and laboratory-based diagnosis. A comprehensive training session was delivered by the farm veterinarian, focusing on practical aquaculture health management. A guided tour was conducted to explore existing farm infrastructure, including ponds, hatcheries, and feed storage. Students participated in the sampling of fish, water, and other relevant materials for further analysis.



Figure 2: The team at the Kyanja KCCA Demonstration Farm.

At Makerere University ABL Laboratory, students engaged in sample processing, including identification of external and internal parasites. Participants carried out microbiological culture techniques, gram staining, and preliminary diagnostic assays. A demonstration of molecular diagnostic methods such as PCR was presented, providing students with insight into advanced aquatic diagnostics.



Figure 3: WAVMA Students together with their instructors (Dr. Nelly Isyagi, WAVMA President, Dr. Kunda Ndashe, Dr. Stephen Reichley and Dr. David Kahwa) at the microbiology laboratory after a disease diagnostics exercise at the College of Veterinary Medicine Animal Resources and Biosecurity, Makerere University.

OBSERVATIONS

While Kyanja Demonstration Farm serves as a learning center for urban farmers in Kampala, its aquaculture facilities were observed to be underdeveloped. This affects its ability to serve as a model for best aquaculture practices and limits the transfer of modern fish farming techniques to the wider farming community.

Some students showed limited initial familiarity with fish sampling techniques and biosecurity protocols, but quickly improved through hands-on practice and guidance. Inclusion of field placements or internships in aquatic farms and labs could help reinforce knowledge and promote experiential learning.

The training was an eye-opening and enriching experience for the participating students. It bridged the knowledge gap in aquatic diagnostics and gave students a better appreciation of the field of aquatic veterinary medicine.

We sincerely thank the WAVMA leadership and all facilitators for their generous support and dedication. The free facilitation of this training allowed many students to access knowledge that would otherwise be difficult to obtain, and it has motivated many to consider aquatic medicine as a future area of specialization.

STUDENT REPORTS

New WAVMA Student Chapter
University of Antioquia – College of Veterinary Medicine, Faculty of Agricultural Sciences

We are proud to announce the formation of a WAVMA Student Chapter at the University of Antioquia, Colombia. This initiative was born from a clear and growing recognition of the urgent need for trained professionals in aquatic veterinary medicine in our region. As students passionate about aquatic animal health, we decided to undertake the task of attending to this need, soon realizing that we needed to establish contact with other regions to find trained professionals to help us explore this vital and emerging field.

Our chapter aims for success in this endeavor by fostering a strong community of future aquatic veterinarians through collaboration, networking, and hands-on learning opportunities, including workshops, field visits, and expert-led seminars. We aim to support and inspire individuals seeking to build careers in aquaculture, aquatic domestic and wildlife health, and conservation of aquatic ecosystems with a One Health perspective.

The establishment of this WAVMA Student Chapter marks the beginning of an exciting journey for our faculty, university, country, and region. It is the first WAVMA Student Chapter for South America, and we look forward to growing together with WAVMA's global community.



Student Members:


Juan Pablo Ortiz Zapata (President)


Mariana Uribe Cadavid (Vice President)


Ana Sofía Aristizábal Bustamante (Secretary)


Juan Daniel Zabala Hincapié (Treasurer)


Julián David Rozo Almanzar (Public Relations Manager)


Sara Rodríguez Cardona (Aquatic specimen and slides collection curator)


Mariana Chaparro Gutiérrez (Aquatic species laboratory coordinator)


Natalia Tolosa Grass (Coordinator of Investigative Efforts on Freshwater Animal Species)


Diego Alejandro Sierra Zapata (Coordinator of Investigative Efforts on Commercial Aquarium Industry Animal Species)


Mateo Palacio Cardona (Coordinator of Investigative Efforts on Oceanic Animal Species)


Juan Pablo Colorado Vélez(Public Relations Manager - Elect)


Daniel Osorno Álvarez (Aquatic specimen and slides collection curator - Elect)

Academic Advisors:


Dr. Paola Barato


Dr. Jenny Chaparro


Dr Carlos David

STUDENT REPORTS

Pitts Aquatic Education Award Report
Vancouver Aquarium Externship
Erika Mueller

My name is Erika Mueller, and I am a recently graduated veterinarian from the University of Wisconsin. I am grateful that I was selected for the John L. Pitts Aquatic Veterinary Education Award, as it allowed me to complete a 3-week externship at the Vancouver Aquarium in Vancouver, BC. This was my last clinical rotation of my veterinary school career, and it was an overwhelmingly positive experience that finished my clinical year on a high note.

Aquatic medicine is something I have had a long-held interest in due to the diverse range of species and the field's strong ties to conservation medicine. In the summer of 2023, I had the incredible opportunity to take AQUAVET I, which reaffirmed and strengthened my interest in aquatics alongside my interest in wildlife work. When it came time to plan my clinical year, I was particularly interested in the Vancouver Aquarium's externship program because of their association with the Marine Mammal Rescue Society.



During my time with the aquarium, I had the opportunity to go on a rescue call for a lethargic and minimally responsive California sea lion. The team efficiently immobilized and transported the sea lion for a successful rescue while simultaneously maintaining public safety and fielding the questions of onlookers, which was an inspiring learning experience in marine mammal rescue.



The animal health team at the Vancouver Aquarium does a phenomenal job of mentorship and ensuring externs maximize their learning opportunities. While at the aquarium, I got to see a diverse caseload of both marine and terrestrial mammals, teleosts, elasmobranchs, amphibians, and reptiles. Witnessing the high level of communication between the animal health team and aquarists/keepers helped instill the importance of these relationships in my career going forward. This is especially true in a field where the team must exercise creativity and problem-solving to access their patients in the safest way possible.

During the externship, I also became much more comfortable monitoring anesthesia in fish, performing fish necropsies, and doing routine diagnostic scrapes and clips. One of my favorite moments occurred during a full diagnostic assessment of a Northern Sea Otter, I had the opportunity to perform a jugular blood draw and practice interpreting lab results.

I am very thankful for WAVMA's support through the John L. Pitts Aquatic Veterinary Education Award. I learned so much through this invaluable opportunity and know this experience will benefit my future patients.

STUDENT REPORTS

Pitts Aquatic Education Award Report
Emma Yi Kwan Lau
Bristol Veterinary School

Mowi Scotland, Salmon Health Externship

My name is Emma, a final-year veterinary student at the University of Bristol in the United Kingdom. I would like to share my experiences with Mowi Scotland in the summer of 2025 before finishing my veterinary degree.

Uist and Barra

After taking an overnight sleeper train from London Euston to Glasgow, I caught a flight to Benbecula, where I was welcomed by the Area Health Manager. My first day included an introduction to the company's data logging systems and a tour of one of the South Uist marine sites.

Figure 1.
Sea cages seen from the flight to Benbecula



The first week quickly took shape with hands-on learning. I attended weekly meetings with both the Health and Production teams, which provided a detailed overview of how treatment plans are developed collaboratively across departments. These meetings laid the foundation for understanding how data, field observations, and welfare priorities inform each decision.

A highlight of the week was visiting two sites in Cheese Bay, where I assisted with welfare scoring and conducted health checks on salmon. I also contributed to the site visit report, which reinforced the importance of accurate, timely documentation in aquaculture health management.

Fieldwork inevitably comes with some uncertainties. For example, due to poor weather, one scheduled site visit for well boat treatment was postponed. I took these opportunities to build my theoretical knowledge through online training via Mowi Academy. Courses included identifying and responding to sea lice, jellyfish and zooplankton monitoring, salmon and cleaner fish anatomy and welfare, and escape prevention protocols.

Figure 2.
Cheese Bay site office



Figure 3.
Boat trip to Stulaigh sea cages



At the end of week 1, I observed the full cycle of a well boat treatment; from crowding and loading salmon, to freshwater and formalin treatments, through to discharge back into sea cages. I assisted in the weighing of 100 randomly selected fish post-treatment, gaining valuable insight into the practical steps taken to monitor welfare during handling and treatment.

In Week 2, I continued shadowing the health team across Uist, developing a more independent role in site visits. I joined more health checks, contributing to gill scoring, external examinations, and sea lice counting. I also collected blood samples from salmon that had undergone freshwater treatment in the previous week to assess packed cell volume (PCV), a key marker for post-treatment anaemia.

Environmental parameters were a recurring theme in decision-making. I learned how temperature, salinity, plankton levels, and pen size informed both welfare assessments and feeding strategies. For example, a site near Barra has 200-metre pens, which posed challenges for even feed distribution. To address this, dual feed spreaders were installed in each pen. This innovative solution demonstrates how site-specific adaptations play a vital role in optimising welfare and productivity.

STUDENT REPORTS

Isle of Skye

I transferred to the Isle of Skye mid-externship, where I was introduced to a new set of environmental and logistical challenges. The Skye region includes a wider range of site scales and exposure levels, which provided me with new opportunities to explore different cage designs, husbandry routines, and site infrastructure adapted to local conditions.

On my first day, I joined the Caol Mor site team, which manages three separate farms. During the morning, I assisted with necropsies of moribund fish. Several fish displayed lesions consistent with *Yersinia ruckeri* infection, while others showed signs suggestive of Cardiomyopathy Syndrome (CMS) and Heart and Skeletal Muscle Inflammation (HSMI). One fish had an unusual anatomy, with no clear separation between the heart and liver. This experience helped solidify my understanding of common pathology in farmed salmon and the importance of site-level disease surveillance.

Later that day, I took part in a smolt transfer operation. Smolts were delivered by truck and moved into sea cages. I was responsible for monitoring oxygen levels during the transfer and performed welfare scoring to assess stress indicators throughout the process. It was valuable to witness the logistical coordination involved in transferring large volumes of smolts while maintaining biosecurity and fish welfare standards.

On my second day, I continued working with the Caol Mor team, where I was involved in welfare assessments, blood sampling, and sample processing—building on the skills I had developed during my time in Uist. I also observed the transport and unloading of wild captured wrasse into the sea cages.

On the third day, I shadowed the Area Health Manager to a broodstock marine site. There, I conducted necropsies and collected appropriate diagnostic samples, further expanding my exposure to fish health monitoring practices and procedures in a high-value stock environment.

In the days that followed, I continued to shadow the Area Health Manager, further refining my techniques in fish handling, lice counting, conducting welfare assessments, and performing necropsies. Before leaving Skye, I had the valuable opportunity to assist with a sentinel pen welfare and lice assessment. These pens housed the same smolts that had been stocked at the start of my first week on Skye. The assessment was conducted by an external veterinary consultancy contracted by the Marine Directorate. It was particularly insightful to observe how such independent evaluations are used to predict infestation pressure at a site and how these findings can influence site licensing and regulatory decisions.



Figure 4.
Processing blood samples and measuring PCV

Fort William

For my final week, I was based in Fort William, home to Mowi's main offices and several key freshwater facilities. This gave me insight into the early production stages and how freshwater health management connects with sea operations.

I spent a day with the freshwater Health Manager, observing a pre-vaccination grading. It was insightful to see the scale and coordination required to prepare smolts for seawater transfer, and how water quality and fish condition are monitored throughout.

The remainder of the week focused on sea cage sites located in brackish water environments. I observed a Salmosan® bath treatment carried out at one of these sites — a valuable opportunity to understand the practical application of delousing protocols under challenging environmental conditions. This experience deepened my appreciation for the precision and welfare considerations required during therapeutic interventions, especially in variable salinity conditions where fish tolerance and treatment efficacy must be carefully balanced.

Throughout the five weeks, I had the chance to meet veterinarians and biologists from different regions. Conversations about case management, regulatory compliance, and the importance of continual professional development underscored the complexity of fish health management in a large-scale operation like Mowi.

Acknowledgements

I would like to sincerely thank the John L. Pitts Aquatic Veterinary Education Program and Mowi Scotland for supporting my externship. This opportunity has been instrumental in expanding my practical knowledge and skills in salmonid health and in affirming my aspirations to pursue a career in aquaculture. Without this scholarship and Mowi Scotland's support, the experience of living and working across remote sites in Uist, the Isle of Skye, and Fort William would not have been possible. I am truly grateful for your support in making this immersive learning opportunity a reality.



Figure 5.
Sea cages in Caol Mor

Making Waves in the Desert:
Launching the WAVMA Student Chapter at the University of Arizona

By Tenniya Martin, DVM Candidate % 2027

In the Spring of 2025, the University of Arizona College of Veterinary Medicine proudly launched its first-ever student chapter of the World Aquatic Veterinary Medical Association (WAVMA). As a new and growing veterinary program in the heart of the Sonoran Desert, we're excited to bring aquatic animal medicine to the forefront of student engagement and education—proving you don't need an ocean to dive into this field.

Our chapter was founded with a clear mission: to expose veterinary students to the diverse and vital world of aquatic animal health, from ornamental fish and aquaculture to marine wildlife and ecosystem conservation. With increasing global demand for aquatic animal care, our goal is to prepare the next generation of veterinarians to meet this need with confidence, competence, and curiosity.

Our first-year programming includes a speaker series, fish health wet labs, journal clubs, and a snorkeling field trip—all designed to offer hands-on learning and connection with aquatic veterinary professionals across disciplines. We will also be partnering with other student organizations and ensuring events are inclusive and beginner-friendly.

We're incredibly grateful for WAVMA's support and excited to contribute to this international community. We hope to collaborate with other chapters, host joint events, and empower more students to explore the possibilities in aquatic medicine.

Stay tuned—we're just getting started!

For collaboration, speaker ideas, or student chapter questions, feel free to reach out:
arizonawavma@gmail.com



WAVMA Student Chapter at the University of Arizona

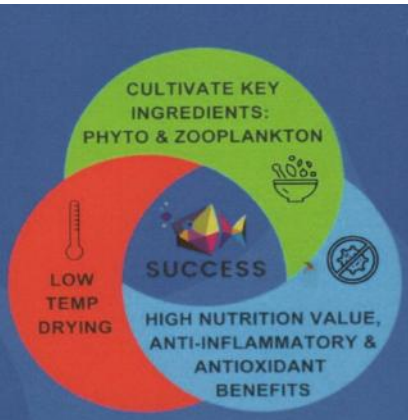
Pictured left to right:
Dr. Mitchell Zischke (Faculty Advisor),
Rachel Kataria (Vice President),
Tenniya Martin (President),
Camila Betancourt (Treasurer),
Sarah Geertgens (Secretary)

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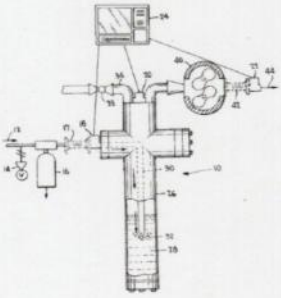
- Crumble: Herbivore, Omnivore, Carnivore (various sizes)
- Fry Powders
- Coral Powders
- Vibrant Sticks
- BluEco Sticks
- Live Feed



Product available in bulk buckets, bag-in-box, retail packs
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TECHNOLOGY

- Patented Algae Grow Technology: CO_2 Absorption System
- Intelectual Property: How to use Spirulina as both an ingredient and a binding agent
- Low temperature drying technology



COLLEAGUE'S CONNECTION

Meet Myron Kebus, M.S, D.V.M.
Assistant Professor,
Pathobiology and Diagnostic Investigation,
College of Veterinary Medicine
Michigan State University

As a young man, Myron Kebus would stash his fishing gear in the *Free Press* satchel he used for his daily paper route, strap it to his handlebars, and bike to the Detroit River.

"I was very interested in fish," said Kebus, who grew up on the city's east side. "I drew fish. I went fishing. I wrote about fish. I ate fish. I dreamt about fish." When he decided to go to veterinary school, he wanted to specialize in fish. However, few such programs existed. But Kebus persisted.

"I loved fish. I loved veterinary medicine. I wanted to combine the two. And I did it despite the advice of most people," he recalled.

Now regarded as a worldwide expert in aquaculture, Kebus joined MSU as an assistant professor in the College of Veterinary Medicine in fall 2022. He collaborates with fish producers, researchers, and veterinarians in Michigan and beyond to strengthen fish health and train more veterinarians in aquaculture. Kebus serves as an outreach veterinarian in the North Central United States and works with the North Central Regional Aquaculture Center (NCRAC), an organization that pairs fish farmers with researchers to support the aquaculture industry in Michigan, Illinois, Indiana, Iowa, Kansas, Minnesota, North Dakota, Ohio, and Wisconsin. Prior to joining MSU, he was director of the Fish Health Program with the Wisconsin Department of Agriculture, Trade and Consumer Protection.



Dr. Kebus examines a fish for signs of disease.

At MSU, he works closely with Thomas Loch, M.S., Ph.D., who is principal investigator of the Aquatic Animal Health Laboratory and is an associate professor with a dual appointment in the College of Agriculture and Natural Resources and the College of Veterinary Medicine.

In Michigan, aquaculture is comprised of two main sectors. The Michigan Department of Natural Resources (MDNR) raises anywhere from 18 to 30 million fish, including walleye, trout, and salmon, at six hatcheries. Stocking trucks deliver them to rivers, streams, inland lakes, and the Great Lakes.

"We stock everything from small streams you could jump across to large rivers, large and small inland lakes. And we spend a lot of time traveling to take fish to the Great Lakes as well," said Ed Eisch, assistant chief of the MDNR fisheries division.



Photo to left: Dr. Kebus, an expert in aquatic veterinary medicine, works with veterinarians and fish farmers throughout the region.

COLLEAGUE'S CONNECTION

A smaller but significant sector of aquaculture in Michigan and the region is the commercial fish industry, which raises fish primarily for food but also for bait and stocking. Worldwide more than 50 percent of the fish people eat are farm-raised. But the U.S. produces only a fraction of that number. "So we have a lot of room to grow," Kebus said.

Whether raising fish for consumption or to stock area lakes and streams, producers face a similar challenge: keeping their fish healthy. Each species—fathead minnows, perch, trout, and walleye, to name a few—has different environmental and nutritional requirements. Some prefer light, others don't; some flourish on high-protein diets, others need more fat. "I try to help farmers figure out how to manage everything from water temperature to what type of food they are feeding," Kebus said.

ing with farmers—seeing what works, what doesn't work. My strategy is based on the easy premise of listening and trying to figure out what the issues are and then trying to figure out solutions."

Loch takes a similar approach, visiting the MDNR hatcheries with his students at least once per year to observe the fish and the facility, hear from hatchery personnel about any fish health concerns, and help troubleshoot issues. "They release millions of fish each year," he said. "Where we fit into the picture is helping them keep their fish as healthy as possible."

If fish do get sick, MDNR personnel send samples to Loch's lab. "My amazing team and I then determine what's causing the ailment. In some cases, changing how fish are being raised can solve the issue. In other cases, we can recommend certain treatments that are approved for use in fish," he said.



Loch nets samples at a Michigan fish farm. In the background are visiting scientist Fabiana Pilarski from São Paulo State University and MSU doctoral student Nisha Shrestha.

He works closely with fish producers, touring fish farms in Michigan and other states in the region. "Only part of the knowledge that I use is based on my veterinary training," Kebus explained. "One of the most important components is what I've learned from work-

COLLEAGUE'S CONNECTION

His team of undergraduate and graduate students, researchers, and veterinarians also certifies hatchery-raised fish to ensure they have a clean bill of health before they are released to Michigan's waterways. "We do an exhaustive clinical examination and laboratory testing to look for a range of different viruses, bacteria, and parasites," Loch said.

MDNR's Eisch described his work with Loch as "one of the most successful collaborations you could ever hope to find."

Meeting with Loch after annual facility inspections has been invaluable, Eisch said. Loch shares his observations with Eisch and the staff, offering suggestions to improve fish health and identifying biosecurity issues. "He's really pointed out ways to improve our animal husbandry and fish health," Eisch said.



Together, Kebus and Loch form a formidable team, combining Kebus' clinical skills and Loch's expertise as a researcher. In 2023, the two of them went on a "hatchery circuit," visiting four hatcheries in four days. They also visit fish farms together, often bringing students with them.

Last August, for example, Kebus and Loch and their students visited Eagle Creek Fish Company in Jackson, Michigan. The company incubates eggs, then raises the young trout in artesian water-fed, 70-foot-long raceways that mimic streams.

Manager Brian Benjamin walked them through the facility, the only commercial operation in the state that hatches, grows, processes, and sells Eagle Creek rainbow trout on site. Kebus and Loch helped Benjamin troubleshoot issues, and the students received firsthand experience. "We benefited from them coming by, and they benefit because they can bring their students," Benjamin said.

"That's been one of the more rewarding aspects of this collaboration," Loch said. "We've been working with fish farmers from the beginning. It's not us telling them, 'Hey, you need this.' It's them saying, 'Hey can you please help us solve this?'"

For example, a fish farmer might call Kebus to report a problem. Kebus will then consult with Loch, and the two will devise a plan and arrange lab testing. Then they will meet with the farmer to go over the findings and develop a prevention plan.

Fish producers have sought Kebus and Loch's help in combatting one of the top diseases affecting salmon and trout—bacterial cold-water disease. Loch and his lab team, particularly Nisha Shrestha (a doctoral student in the MSU Department of Fisheries and Wildlife), have been working to develop a vaccine to combat this disease.

"Where I come in is working with [Loch] to collect samples from Michigan and beyond," Kebus said. Loch and his team are testing the samples to tease out the most problematic variants of the microbe that causes the disease. Once a vaccine is developed, Kebus and Loch plan to return to the fish farms to test it.

"It's teamwork," said Kebus. "I'm working in the field, and he's working in the lab." Loch said the collaboration with Kebus and fish producers has led to promising results. "We're optimistic that we're going to be able to devise a vaccine against this disease," he said.

Loch and his team at the MSU Aquatic Animal Health Laboratory are developing a vaccine to prevent a disease affecting salmon and trout.

Fish producers also have identified a need for more veterinarians trained in fish health. Last year, Kebus received a USDA grant to strengthen and bolster the fish veterinarian workforce in Michigan and the North Central region. He hosted 12 virtual meetings with experienced and aspiring fish veterinarians along with fish farmers to determine core competencies.

At a session with farmers, he asked for their input about veterinarians. "One of the comments was, 'They can do the technical work, but they need help



Myron Kebus and Thomas Loch visit a state fish hatchery in northern Michigan.

understanding better how fish are produced in order to really help me troubleshoot when I have a problem," Kebus said.

"That's why I take students to the fish farms," Kebus said. There they can get hands-on experience with handling, feed, and other animal husbandry practices. "It's important to learn how fish farmers are raising their fish," he said. "Just as it's important for an equine vet to know how shoes are put on a horse, how horses are fed."

When Kebus and Loch entered their field, this type of training was not widely available. "Fish and aquaculture will be key to feeding the world," said Dalen Agnew, D.V.M., chair of the Department of Pathobiology and Diagnostic Investigation. Yet, historically, the veterinary profession "has not been as attentive to the health of aquatic animals and their environment as they really should have been," he said.

MSU has a strong team of aquatic health researchers and offers a three-week intensive course on aquatic medicine taught by Bart Gorgoglione, D.V.M., Agnew said. Kebus' expertise and outreach experience further strengthen the department, he said. "We needed someone to reach out to aquaculturists, veterinarians, and potential veterinarians in the field."

Kebus and Loch are paving the way for more veterinarians to specialize in fish health. They plan to offer hands-on training on basic fish farm veterinary medicine, including how to analyze fish for health problems, what to look for, and when and how to submit samples to labs like Loch's for further testing.

Both Kebus and Loch find their work with students particularly rewarding. When Kebus tells students how he found his way to combining his love of fish and veterinary medicine despite advice to the contrary, "they light up," he said.

Having students join them on visits to hatcheries and farms helps future veterinarians and researchers see the impact of their work on hatchery managers and fish farmers, Loch said. They realize, "I can actually use science and research to solve real-world problems," he said.

Written by Patricia Mish,
University Outreach and Engagement
Photos courtesy of Myron Kebus and Thomas Loch
This article originally appeared in the *Engaged Scholar* e-newsletter, a publication of
Michigan State University Outreach and Engagement.
April 2025 | Volume 17, Issue 4

RESEACH REPORT

Integrated field sampling approaches to detect aquatic viruses

North American freshwaters face the threat of invasive Asian carp species, including Grass, Silver, Bighead, and Black Carp. These species have already established populations in the Mississippi River basin and are reaching the Great Lakes watershed due to the connection through the Illinois River with Lake Michigan. With Common and Grass Carp populations already established in the river, the Great Lakes basin is at imminent risk of carp species invasion, which will have a significant impact on the region's ecosystems and become nearly impossible to control or eradicate.

As spring temperatures rise, researchers from Michigan State University (MSU), led by Dr. Bartolomeo Gorgoglione, the Principal Investigator of the Fish Pathobiology and Immunology Laboratory (FPIL), begin their seasonal wild fish sampling activities. The MSU-FPIL group is investigating the susceptibility of invasive Asian carp species to emerging viral infections, such as *Cyprinid herpesvirus* 3 (CyHV-3) or Koi herpesvirus (KHV), and Carp Edema Virus (CEV), which have internationally led to concerns over fish health and aquaculture sustainability, and in some circumstances have been proposed as biocontrol agents. This research is currently carried out by the PhD student Santosh Lamichhane, enrolled in the Comparative Medicine and Integrative Biology (CMIB) Graduate Program of the MSU College of Veterinary Medicine, and funded by a US-Israel Binational Agricultural Research and Development Fund (BARD) project and by a NOAA Michigan Sea Grant Fellowship.

Fieldwork took place in the Illinois River, near the town of Morris, IL on 6th and 7th of May, 2025. The effort marked the sixth year of collaboration between the MSU research group and the Illinois Department of Natural Resources (IDNR) Aquatic Nuisance Species Program, in coordination with Justin Widloe and Allison Lenaerts. Using gill nets, the IDNR personnel capture several species of invasive Asian carp, part of a massive mass removal effort aimed at preventing their further spread and eventually their entrance into the Great Lakes.

This year the FPIL team, including Dr. Gorgoglione, Santosh Lamichhane, and Dr. Cahya K. Fusianto, was joined by Dr. Ivana Giovanna Zupičić, a scientist from the Croatian Veterinary Institute in Zagreb, Croatia, which performs specific molecular biology and other assays for the confirmatory diagnosis of KHV, and are implementing CEV testing. Supported by the 2024 Small Grant Scheme granted by the European Association of Fish Pathologists E.V. (EAFP), Dr. Zupičić visited MSU in East Lansing, MI during the spring of 2025.

During this year's campaign, an array of tissue samples was collected from fishes, including from the highly invasive silver carp (*Hypophthalmichthys molitrix*) and bighead carp (*H. nobilis*), as well as from common (*Cyprinus carpio*) and grass carp (*Ctenopharyngodon idella*) that have already established populations in the Great Lakes basin. In addition, native fishes, occasionally trapped in the nets were also sampled, including bigmouth (*Ictiobus cyprinellus*), and smallmouth buffalo (*I. bubalus*), and freshwater drum



Figure 1: Water sampling and water parameters recording from the IDNR boat with freshly caught fish from the Illinois River.

(*Aplodinotus grunniens*). The field sampling work was followed by laboratory testing at MSU, screening all samples by qPCR for both CyHV-3 and CEV.

Pooled organs homogenates were also inoculated onto cell lines to test the occurrence of viral-induce cytopathic effects, while selected tissue samples were histologically examined to describe morphological alteration induced by the viral infection. In addition to the fish organs sampling, Dr. Zupičić coordinated the collection of water samples, aiming at detecting CyHV-3 and CEV using the environmental DNA (eDNA) technique. Water samples were collected from multiple locations in the Illinois River and processed either for conventional eDNA technique (through water filtration followed by DNA extraction) and for DNA capturing using magnetic nanoparticles.

The aim of Dr. Zupičić visit to MSU, carried out between April and May of 2025, was indeed to study KHV and CEV occurrence in unconventional fish hosts and to design biosensors capable of detecting KHV and CEV through non-invasive sampling techniques. The method involves magnetic nanoparticles for virus particles capture and concentration, potentially streamlining DNA extraction and improving field diagnostics.

This partnership involves the MSU Nano-Biosensors Laboratory (NBL) of Prof. Evangelyn Alocilja, internationally known for developing biosensors for rapid detection of human and terrestrial animal viral diseases that can be adapted (type and suitability) for detecting aquatic pathogens, and for establishing the Global Alliance for Rapid Diagnostics (GARD).

During the spring of 2024, partnering with the FPIL, the GARD-AQUA was established, aiming at developing new rapid diagnostic tests for aquatic pathogens of relevance for aquatic animals. New biosensors will be optimized for rapid, on-site detection, potentially paving the way for the development of rapid diagnostic kit for use in aquaculture and in wildlife management settings. This interdisciplinary field and laboratory work highlights the importance of international collaborations, combining traditional fish disease diagnostics with innovative biosensing technologies to address emerging threats in aquatic animal health. Dr. Zupičić had great time in the USA at MSU and during this unique field sampling opportunity.

Report by:
Dr. Ivana Giovanna Zupičić, Croatian Veterinary Institute / WAVMA Director at Large for Europe.
Dr. Bartolomeo Gorgoglione, Michigan State University / WAVMA Secretary and Chair of the Education and Students Committee

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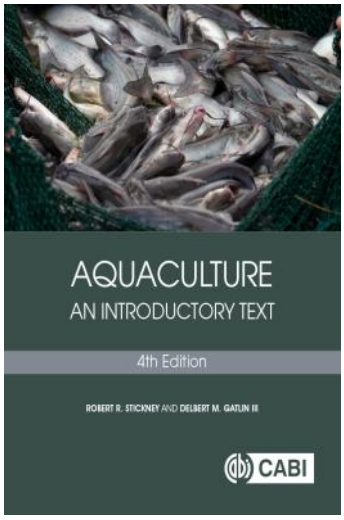
Fig. 2:
Dr. Zupičić together with the FPIL team collecting organs from Illinois River fishes.

LITERATURE REVIEW

CABI Aquaculture Books

CABI publishes a number of books in aquaculture, fish welfare, and fisheries that may be of interest to WAVMA members. These books can be viewed here: https://www.cabidigitallibrary.org/action/showPublications?pubType=book&ConceptID=780213&sortBy=TitleSort&startPage=

These include 15 recently acquired titles that are new to CABI and published as eBooks for the first time. You can find out more about the acquisition here. Previously published in print by 5m Books, the titles are available digitally and as a collection for the first time on CABI Digital Library. Publication in eBook format makes them accessible to a wider audience, both for individual purchase and for libraries.

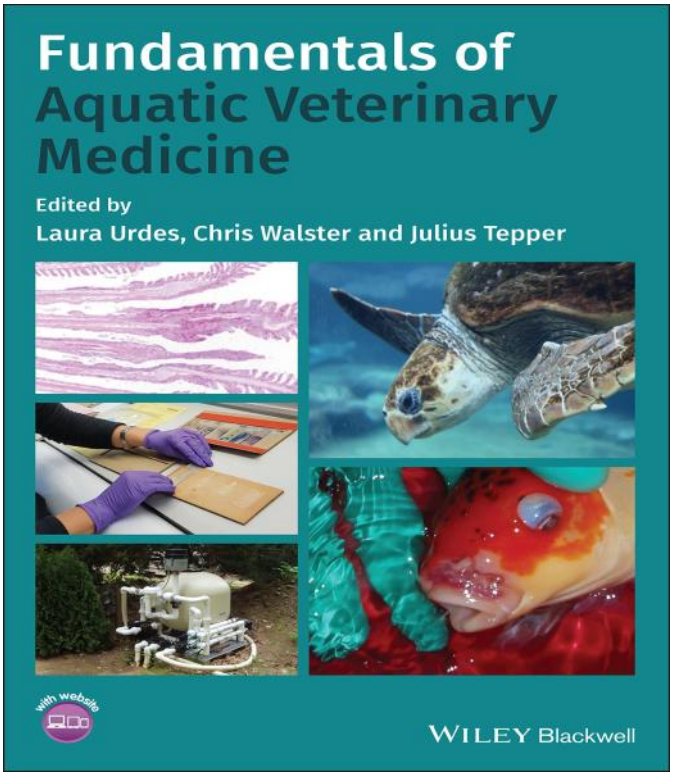




CABI is offering a discount for WAVMA members, using the code **SOC20** for use at checkout on CABI Digital Library. This offer is valid for individual (non-trade) purchases only and is limited to a maximum of 10 copies per order. The discount is available on all orders placed before 31st December 2025. Please note that this promotion cannot be combined with any other discounts or offers.

In addition to the books focused on aquaculture here CABI also publishes information on One Health, which CABI is quite heavily involved in. There is an open access journal, CABI One Health and One Health Knowledge Bank – take a look and see if anything is of interest.

CABI
Nosworthy Way,
Wallingford, Oxfordshire, OX10 8DE, UK



Fundamentals of Aquatic Veterinary Medicine provides systematic, highly practical guidance on the treatment of aquatic mammals, amphibians, fish, and invertebrates in veterinary practice. Mapping to each of the nine core areas of the WAVMA Certified Aquatic Veterinarian (CertAqV) Program, this comprehensive clinical reference covers taxonomy, anatomy and physiology of aquatic species, water quality and life support systems, diagnostics, treatment, and prevention of aquatic diseases, and more. Designed to help readers acquire and demonstrate the necessary knowledge, skills, and experience to be competent in aquatic veterinary medicine, this authoritative guide:

- Focuses on "Day One" competencies outlined by the World Organization for Animal Health (OIE)
- Covers pathobiology and epidemiology of aquatic diseases, public health, zoonotic diseases, and seafood safety
- Provides up-to-date information on relevant legislation, regulations, and policies

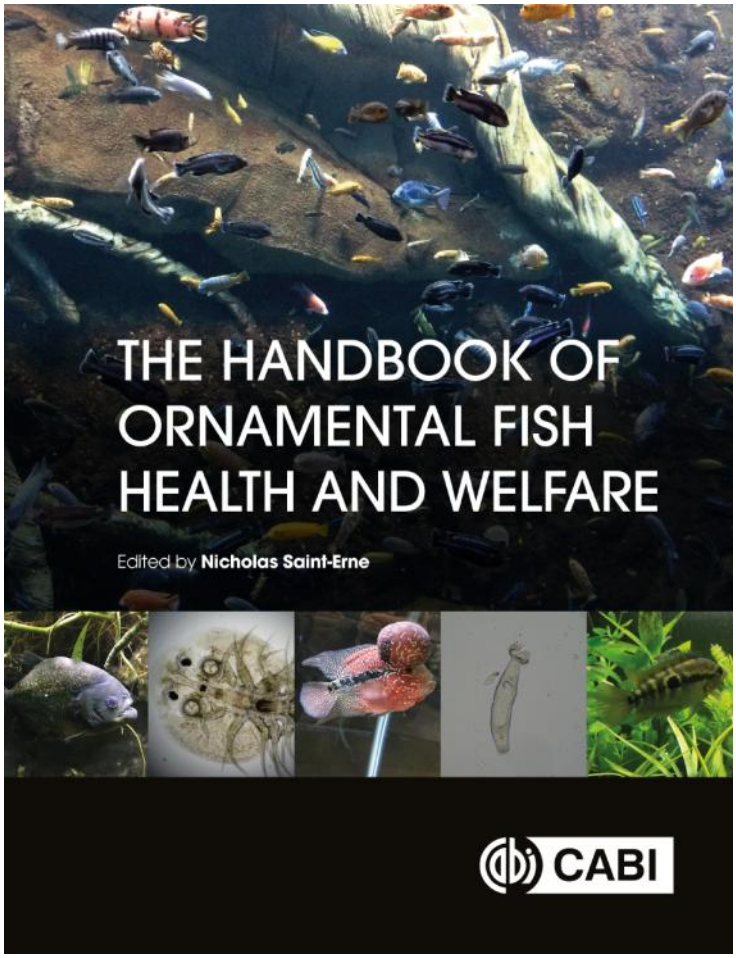
Fundamentals of Aquatic Veterinary Medicine is a must-have reference and review guide for veterinary students and practitioners interested in practicing aquatic veterinary medicine, as well as for aquatic veterinarians looking to become WAVMA certified or wanting to acquire OIE "Day One" competency.

Available from:
https://www.wiley.com/en-us/Fundamentals+of+Aquatic+Veterinary+Medicine-p-9781119612704

LITERATURE REVIEW

***The Handbook of Ornamental Fish Health and Welfare* (2024)**

Edited by **Nicholas Saint-Erne**, DVM, CertAqV
Certified Aquatic Veterinarian
WAVMA Distinguished Fellow



This book forms a complete resource covering ornamental fish health and welfare from a recognized expert on the topic. Beginning with an overview of the tropical fish industry and aquarium keeping, it covers all the key elements of care, including water-quality testing and maintenance, filtration systems, nutrition, husbandry, handling and transportation of fish, disease diagnosis, treatments and medications, and disease prevention. It also reviews areas of wider interest, such as biosecurity and zoonoses.

Chapters include:
1 A Brief History of Keeping Fish in Aquariums
2 Overview of the Ornamental Fish Industry
3 Fish Taxonomy, Anatomy, and Physiology
4 Aquarium Care
5 Water Quality
6 Filtration Systems
7 Fish Pond Care
8 Fish Nutrition
9 Equipping the Veterinary Hospital to Treat Fish Patients
10 Clinical Procedures
11 Diagnostic Tests
12 Fish Hematology and Biochemistry
13 Transporting Samples for Laboratory Analysis
14 Advanced Diagnostic Techniques
15 Sedation, Anesthesia, and Euthanasia
16 Surgery
17 Infectious Diseases
18 Protozoan Parasites
19 Metazoan Parasites
20 Zoonotic Diseases from Fish
21 Non-infectious Diseases
22 Fish Facility Husbandry and Biosecurity
23 Administering Medications to Ornamental Fish
24 Ornamental Fish Welfare
25 Welfare of Fish in Public Aquariums
26 Quarantine Protocol
Recommended Reading
Glossary
Index

The chapter authors are all WAVMA members and Certified Aquatic Veterinarians, and include:

Azureen Erdman, DVM, CertAqV
Sharmie Johnson, DVM, CertAqV
Wildlife World Zoo & Aquarium
Robert Martinez, DVM, CertAqV
Aquatic Veterinary Consulting, PLLC.
Lily Parkinson, DVM, DACZM, DACVECC, CertAqV. Brookfield Zoo
Nicholas Saint-Erne, DVM, CertAqV
WAVMA Distinguished Fellow
Chris Walster, BVMS, MVPH, CertAqV
WAVMA Distinguished Fellow

The book can be read through to gain a complete overview of the care and welfare of ornamental aquarium and pond fish, or it can be used to easily look up specific information about a topic of interest. With extensive photographs, plus references allowing readers to study areas of interest in more detail, this book makes an invaluable teaching and reference handbook. It is a vital source of information for veterinarians, scientists using fish in their labs, students, ornamental fish breeders, retail pet store workers, and aquarium keepers looking for trusted advice about how to properly care for their ornamental freshwater fish.

Available through the CABI website:

https://www.cabidigitallibrary.org/doi/book/10.1079/9781789246032.0000

LITERATURE REVIEW





Carps

David Hoole, Dieter Steinhagen, Verena Jung-Schroers, Mikolaj Adamek

9781836990000 | 480 pages | 2025

www.cabidigitallibrary.org/doi/book/10.1079/9781836990024.0000



Tilapia

Aquaculture, Biology and Health Management

Edited by **Kim Thompson, Craig A. Shoemaker and David C Little**

9781800629387 | 880 pages | 2025

www.cabidigitallibrary.org/doi/book/10.1079/9781800629455.0000



The Handbook of Ornamental Fish Health and Welfare

Edited by **Nick Saint-Erne**

9781789246018 | 368 pages | 2024

www.cabidigitallibrary.org/doi/book/10.1079/9781789246032.0000

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MEETINGS OF INTEREST TO AQUATIC VETERINARIANS

Veterinarians attending these meetings may be awarded veterinary CEPD credit towards annual re-licensure or re-registration to practice veterinary medicine. Individuals should check with the organizers to see if CEPD certificates are provided.

WAVMA Resources for CertAqV and CertAqVN/T
www.wavma.org/WebCEPD
Resource: one hour Webinars on various topics
Cost: Available for free to WAVMA Members.
KSE Credit: Stated for each webinar. To gain the CEPD certificate you need to complete a short quiz.
Evidence: Submission of Certificate with KSE record.

www.wavma.org/video-library
Resource: Video recordings deemed of good quality but not part of WebCEPD
Cost: Free to WAVMA members
KSE Credit: Variable,
Comments: One of WAVMA's primary aims is to promote aquatic veterinary medicine. There are other resources WAVMA provides such as The Aquatic veterinarian, member listservs, e-news and blog.

Aquadocs
www.aquadocspodcast.com
Resource: Various discussion topics
Cost: Free
KSE Credit: Dependent on time and topic
Evidence: None. Discuss with mentor
Comments: Lots of information on various topics.



Aquaculture Conferences & Exhibitions

AQUACULTURE EUROPE 2025
Valencia, Spain
September 22-25, 2025
www.aquaeas.org

LACQUA 2025
Puerto Varas, Chile
October 6-9, 2025
www.was.org

40th World Veterinary Association Congress
Washington DC, USA
18-22 Jul 2025

WVA and the American Veterinary Medical Association are proud to invite you for the WVAC 2025 Congress organised in conjunction with the AVMA Convention 2025, July 18-22, 2025 in Washington, D.C.

We'll be bringing together the global veterinary community for an experience unlike any other: high-quality education, exciting events, and the incredible opportunity to meet colleagues from all over the world.

For more information, visit :
https://www.avma.org/events/avma-convention

Fish Health Section-Asian Fisheries Society
Chennai, India
September 23-27, 2025

This is to share that Fish Health Section (FHS) of the Asian Fisheries Society (AFS), in collaboration with ICAR–Central Institute of Brackishwater Aquaculture, Chennai, is organizing the **12th Symposium on Diseases in Asian Aquaculture (DAA12) at (https://daa12.in/)**

DAA12 continues the legacy of the DAA series as a premier platform for researchers, industry professionals, and students to exchange knowledge in the field of aquatic animal health. This five-day event will focus on the theme: **"Transformative Innovations Shaping the Future of Aquatic Animal Health Management."**
We hope you will consider attending, and encourage your colleagues and networks to participate as well.
We look forward to welcoming you to Chennai, India!
With best regards.

P.K.Pradhan
Vice-Chairperson,
Fish Health Section-Asian Fisheries Society

Fish Vet Masterclass

Online Training Course

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

The Fish Vet

Level Up Your Fish Vetting Skills.

The Fish Vet Masterclass is created by qualified fish veterinarian and pathologist, Dr Richmond Loh, with over 20 years of experience. This 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 100 lessons;

- Fish Disease investigative process - 8 Lessons.
- Microscopes and Microscopy - 3 Lessons.
- Diet and Nutrition - 7 Lessons
- Water quality - 19 Lessons
- Viral Diseases of Fish - 6 Lessons
- Bacterial Diseases of Fish - 4 Lessons
- Algal Diseases of Fish - 3 Lessons
- Fungal and Oomycete Diseases of fish - 4 Lessons
- Protozoal Parasites of Fish - 10 Lessons
- Trematode (Fluke) Worm Infestations in Fish - 3 Lessons
- Nematode (round worm) Infestations in Fish - 2 Lessons
- Other Disease conditions - 14 Lessons
- Formulary of Fish Medications - 7 Lessons
- Biosecurity - 2 Lessons
- Welfare and Euthanasia - 4 Lessons
- Anaesthesia and Surgery - 5 Lessons
- Euthanasia - 1 Lesson
- Laboratory Testing - 2 Lessons
- Case Studies - 5 lessons
- VIP Access for FVMC Facebook group for direct questions with Dr Loh

Certificate upon achieving a passing exam score



AQUATIC VETERINARY CE & PD

The Fish Vet Masterclass online course

Testimonials

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 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!

Dr Sandri Jonker

Veterinarian (DVM)

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

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

Betta splendens photograph by Aquazone Indonesia



AQUATIC VETERINARY CE & PD

50TH CONGRESS

OF THE WORLD SMALL ANIMAL VETERINARY ASSOCIATION

25-27 SEPTEMBER 2025
RIO DE JANEIRO, BRAZIL



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Early Registration Deadline: June 17, 2025

Click here to register:
https://wsava-congress.org/register/

Upcoming WAVMA Webinasr:

B-1094: Unmasking the Ordinary: Challenging cases in Aquatic Pathology (joint WAVMA+TAVA webCEPD)
Date: July 30, 2025

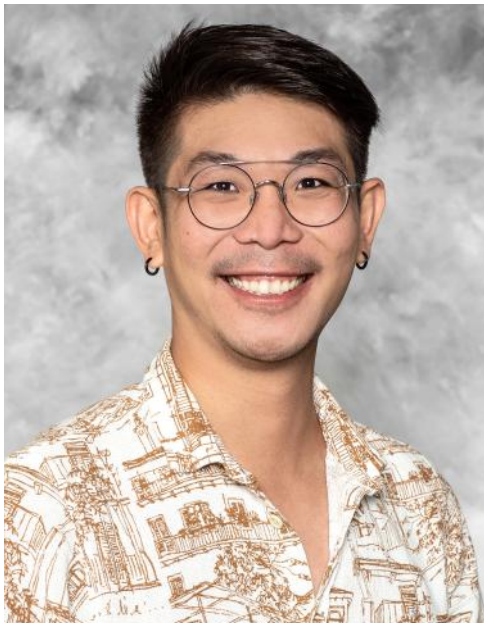
Time: 02:00 PM UTC

Presenter:

Weerapong "Mac" Laovechprasit (DVM, PhD)

Credits: 1.0 hour

Register now





AQUATIC VETERINARY CE & PD

Recently uploaded WAVMA WebCEPD Webinars:

B-1089 “Fish ER Medicine”,
January 30th
by Dr Robert Martinez (USA).

B-1090 “Biotechnological strategies to avoid antibiotic use in managing bacterial infections in farmed freshwater fish”
February 27th
by Dr Paola Barato (Colombia)

B.-1091 “Cetacean stranding response”
April 30th
by Dr Natalie Arrow (UK).

B-1092: Aquaculture Biosecurity
Date: May 28, 2025
Presenter: Myron Kebus, M.S., DVM

B-1093: From Concepts to Practices: Introducing Tilapia Welfare Assessment Tools
Date: July 2, 2025
Presenter: Mr Wasseem Emam, Dr Sara Barrento, Mr Murilo Quintiliano

See these webinars and more at:
https://www.wavma.org/WebCEPD

AAFV Conference 2025
October 12-16, 2025
Riverhead, NY

The conference is being held at the Long Island Aquarium:
https://www.longislandaquarium.com/

While we’re putting the finishing touches on our 2025 Conference schedule, you can start planning now by booking your hotel! Stay tuned for updates—we promise 2025 will be even bigger and better!
The American Association of Fish Veterinarians (AAFV; fishvets.org)
https://fishvets.org/aafv-conference/

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