Aquaculture 2022

Come one, Come all, for Aquaculture Large and Small

February 28 - March 4, 2022
Town and Country Resort & Conference Center
San Diego, California

CO-SPONSORS

Hosted By:
California Aquaculture Association

ASSOCIATE SPONSORS

Aquacultural Engineering Society
Aquaculture Association of Canada
Aquaculture Feed Industry Association
Catfish Farmers of America
Global Aquaculture Alliance
International Association of Aquaculture Economics and Management
Latin America & Caribbean Chapter WA
US Trout Farmers Association
World Aquatic Veterinary Medical Association
Zebrafish Husbandry Association
Aquaculture 2022

Every three years, the Triennial is held somewhere in the United States. In 2022, the Triennial returns to sunny San Diego – one of America’s favorite cities.

THE TRIENNIAL IS THE LARGEST AQUACULTURE MEETING IN THE WORLD!

The Triennial is the largest aquaculture conference and tradeshow held in the world with nearly 4,000 attendees from over 90 countries and even more countries are expected to have attendees at AQUACULTURE 2022. The Triennial combines the annual meetings of the Fish Culture Section of the American Fisheries Society, World Aquaculture Society, National Shellfisheries Association, and the National Aquaculture Association. In addition to the annual meetings of the main sponsors, look what else is happening at AQUACULTURE 2022!

- AQUACULTURE AMERICA - Annual Meeting of USAS, the U.S. Chapter of World Aquaculture Society and the Aquaculture Suppliers Association.
- Annual Meeting of the U.S. Trout Farmers Association
- Special sessions organized by Aquacultural Engineering Society and International Association of Aquaculture Economics and Management
- Many other meetings of working groups, government agencies and related aquaculture activities
- Program with technical sessions and producers seminars covering virtually all species grown in aquaculture
- AND - look at all of the Associate Sponsors on the cover who are participating in the program development!

The last Triennial was held in 2019 in New Orleans where it was pronounced a huge success by over 3,000 people who attended. Don’t miss this Triennial!

FOR MORE INFORMATION

Aquaculture 2022
Conference Management Office
P.O. Box 2302
Valley Center, CA 92082 USA
Questions: Tel: +1-760-751-5005  Fax: +1-760-751-5003
worldaqua@was.org
Aquaculture 2022 is the place to learn about the latest in aquaculture, see the newest technology in the trade show, and have a great time in the many fantastic restaurants and entertainment sites in San Diego!

EXPANDED PRODUCER PROGRAM

The Triennial is known for the high quality of its Producer Program organized by the National Aquaculture Association. AQUACULTURE 2022 will continue to expand the size and scope of the producer program to address all of the issues facing producers in the U.S. as well as around the world.

PRODUCER TOPICS

Aquatic Animal Drug Approval
Aquatic Animal Health and Welfare
Environmental Issues
Farm Energy Cost Reduction
Farm Planning and Management Tools: Design, Production and Farm/Firm
Federal Agency Town Hall Meeting
Feed, Feeding and Feed Ingredients
Marketing and Promotion
Offshore Aquaculture
Regulatory Costs
Remote Sensing: Farm and Environment
Science and Public Policy
Start Up Aquaculture
Women in Aquaculture

A CRITICAL TRADE SHOW FOR AQUACULTURISTS!

AQUACULTURE 2022 will have the largest aquaculture trade show in the Western Hemisphere and one of the largest anywhere in the world with nearly 200 booths! This is your opportunity to inspect the latest in products and services for the aquaculture industry. It is the place to visit current suppliers and make new contacts. To keep ahead and to keep profits building, you need to keep pace with the technological advancements in the industry - and AQUACULTURE 2022 is the place to do it!

TECHNICAL PROGRAM COVERS THE LATEST RESEARCH

The Triennial Sponsors will put together an extensive technical program featuring special sessions, contributed papers and workshops on all of the species and issues facing aquaculturists around the country. There will be several Featured Sessions covering current topics of global concern. Sample topics will include:

- Shrimp
- Shrimp Nutrition
- Shrimp Health & Disease
- Shellfish Disease
- Finfish Disease
- Finfish Nutrition
- Shellfish Nutrition
- Marine Finfish
- Aquaculture Engineering
- Zebrash
- Aquaponics
- Tuna
- Open Ocean Aquaculture
- IMTA / Integrated Aquaculture
- Biofouling
- Conservation / Restoration
  - Aquaculture
- Distaster Relief
- Sea Lice
- GMO Fish and Shellfish
- Consumer Perceptions of Farm-raised Seafood
- History of Aquaculture
- Mussels
- Scallops
- Oysters
- Clams
- Abalone
- Geoducks
- Pearl oysters
- Freshwater mussels
- Tridacna
- Shellfish genomics
- Post harvest shellfish treatment
- Sea Urchins
- Macrobrachium
- Crustaceans
- Tilapia
- Catfish
- Largemouth bass
- Sturgeon
- Gar, paddlefish and bowfin
- Percids
- Finfish genetics
- Pond fertilization and fish larviculture
- Ornamentals
- Mullet
- Fish Physiology
- Larval Finfish
- Eels
- Finfish Breeding, Genetics, Genomics
- Striped Bass & Hybrids
- Dermo Disease
- Probiotics and feed additives
- Therapeutic drugs
- Vibrio
- Biosecurity
- Probiotics in aquaculture
- Nutraceuticals
- Biotechnology
- Stock Enhancement
- Broodstock propagation and management
- Fish transport
- Hatchery technology
- Recirculation technology
- Freshwater Pond Aquaculture
- Recreational and ornamental pond management
- Small scale aquaculture
- Urban aquaculture
- Artemia
- Harmful algal blooms
- Law, Regulations, and Policy
- Aquaculture Without Frontiers
- Aquaculture education (including minority-serving institutions)
- Market driven aquaculture: developing and sustaining an industry
- Aquaculture Economics
- Ecology & Environment
- Policy & regulations
- Organic Aquaculture: Future Opportunities
- Certification
- Endangered species
- Frogs
- Water Quality & Effluents
- Extension/Technology Transfer
- Feeds
- Latin American and Caribbean Aquaculture
- Fish Oil
- Fish Health and Welfare
CALL FOR PAPERS – DEADLINE: October 15, 2021

AQUACULTURE 2022 encourages the submission of high quality oral and poster presentations. We strongly encourage authors to consider poster presentations because poster sessions will be an integral part of the program. Papers submitted for “oral presentation only” may not be accepted as oral presentations due to the limited number of available time slots. All abstracts must be in English – the official language of the conference.

Each oral presenter shall be entitled to no more than 12 minutes for a presentation, plus 3 minutes for questions. Authors of studies involving proprietary products or formulations should present this information in workshops or the trade show. Oral presentations should use Power Point. Slides, overhead projectors, and video players will not be available or allowed.

All presenters are required to pay their own registration, accommodation and travel expenses. AQUACULTURE 2022 cannot subsidize registration fees, travel or hotel costs.

No Abstract Book will be printed – a USB Abstract Book will be given to registered attendees.

INSTRUCTIONS FOR PREPARATION OF ABSTRACTS

Expanded Abstract Format - Please refer to the sample.

1. TITLE OF PAPER: The abstract title is printed in CAPITAL LETTERS, with the exception of scientific names which should be upper/lower case and italicized (see example). Scientific names should not be preceded or followed by commas or parentheses or other markings.

2. AUTHOR(S): The first name should be the presenting author. Use * after the presenting author. Type in upper/lower case.

3. ADDRESS AND EMAIL: Type only the presenting author’s institution, address and email. Type in upper/lower case.

4. MAXIMUM LENGTH: One Page

5. PAGE SIZE: Standard 8.5 x 11 inch paper (portrait)

6. MARGINS: 1-inch margin throughout (left/right/top/bottom)

7. SPACING: Single spaced

8. PARAGRAPHS: Paragraphs should be separated by a blank line and should not be indented.

9. FONTS: Character fonts should be 12 point type.

10. FIGURES & TABLES: Figures and tables are highly recommended. They should be reduced to the appropriate size for a one page abstract and should be clearly readable at the reduced size. The reduced figures and tables should be included in the abstract in camera-ready form.

Red claw crayfish (Cherax quadricarinatus) are one of more than a hundred species of Australian freshwater crayfish. However, because of its rapid growth rate, ease of spawning, wide temperature and dissolved oxygen tolerance, and lack of a larval stage, red claw may be the best candidate for aquaculture in the United States. Red claw are only being investigated in an aquaculture species in this country and there is little information exists on lecithin and cholestrol to be added to their diet, these two nutrients are usually very expensive. Since diet costs can be as much as 70% of the operating expenses for an aquaculture enterprise, it is imperative that the least expensive diet be formulated. Studies that examines the effect of growth performance of newly-hatched juvenile red claw crayfish fed practical diets with and without cholesterol and lecithin. Other practical diets included menhaden fish meal, soybean meal, shrimp meal, wheat flour, vitamin and mineral mix, pellet binder, cod liver oil, and corn oil (Table 1).

After 8 weeks, red claw crayfish fed a practical diet without cholesterol (Diet 3) had significantly (P < 0.05) lower final weight, percentage weight gain, and specific growth rate (SGR) compared to crayfish fed all other diets (Table 2). These results indicate that a practical diet containing 2% cod liver oil and 1% corn oil and having no lecithin appears to be sufficient and that lecithin may not be necessary for juvenile red claw diets.

Please submit your abstract online, contact the Conference Manager for alternative methods at: worldaqua@was.org
ATTENDEE REGISTRATION FORM

Aquaculture 2022
February 28 - March 4 • San Diego, California

Online registration is preferred at www.was.org OR fax or mail both sides with payment. Use one form per person.

PLEASE PRINT CLEARLY OR TYPE

NAME BADGE INFORMATION: (As you want your name badge to read – No titles, please)
First Name ___________________________ SURNAME (FAMILY NAME) ___________________________
Company / Institution ____________________________________________________ (Limited to 40 Letters & Spaces)
Country ________________________________________________________________

MAILING INFORMATION: Email ___________________________
Address ___________________________
City ___________________________ State / Prov ___________________________ Postal Code ___________________________ Country ___________________________
Tel ___________________________ Fax ___________________________ Title: (circle one) Dr. Mr. Ms. Mrs.
(Include country and area code) (Include country and area code)

REGISTRATION FEES: In order to receive the discount rates as listed below, this form and payment must be received by the date listed.

<table>
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<th>TYPE OF REGISTRATION</th>
<th>Register by January 21, 2022</th>
<th>Register by February 15, 2022</th>
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STUDENT NON-MEMBER RATE
Include copy of Student I.D.
You can join WAS on the reverse side and use the Member Rate.

☐ Spouse Rate

TRADE SHOW PASS
Good for 3 days admission to exhibits only – March 1, 2, 3

☐ US$ 50

TOTAL TRADE SHOW PASS US$ ____________

TRADE SHOW PASS (Trade show pass is included with the Full Conference Registration)

INDUSTRY TOURS
See website for current tour information

MEMBERSHIP DUES
- Enter amount from Membership Application on other side if applicable.

Do not mail registration after Jan. 31, 2022 or fax after Feb. 20, 2022.
After those dates, bring this form with you to register at the show.

TOTAL MEMBERSHIP DUES US$ ____________

TOTAL AMOUNT US$ ____________

Registration Confirmation and Receipt will be emailed after processing.

CANCELLATION POLICY: Cancellation of registration must be received - in writing - no later than February 1, 2022. Refunds for registration fees will be subject to a 20% handling fee. Refunds are processed after the conference. No refund will be made for cancellations received after February 1, 2022 or for “no shows”. After February 1, 2022, no refunds will be made for professional or personal emergencies, flight cancellations, denied visa, weather related cancellation or other travel emergencies. Fees for memberships are non-refundable.

PAYMENT METHOD: All fees must be paid to the order of AQUACULTURE 2022.

☐ Check # ____________________ ☐ Visa ☐ Mastercard ☐ American Express
Card # ____________________ Expiration Date ____________
Name on Card ____________________ Signature ____________________ Date ____________

For bank transfer details, contact us.
ASSOCIATION MEMBERSHIPS: Please check all boxes for associations for which you are a current member. Membership in any of those associations qualifies you for the Member Rate on the Registration Fees. You can join an association at any time before registering to qualify for the Member Rate.

- Aquacultural Engineering Society
- Aquaculture Association of Canada
- Aquaculture Without Frontiers
- Asian Fisheries Society
- California Aquaculture Association
- China Society of Fisheries
- Egyptian Aquaculture Society
- European Aquaculture Society
- Fish Culture Section - AFS
- Global Aquaculture Alliance
- Korean Aquaculture Society
- Malaysian Fisheries Society
- National Aquaculture Association
- National Shellfisheries Association
- Sociedad Brasileira de Acuicultura
- Society of Aquaculture Professionals (India)
- Southern African Aquaculture Society
- Spanish Aquaculture Association (SEA)
- US Trout Farmers Association
- World Aquaculture Society
- World Aquatic Veterinary Medical Association
- Zebrafish Husbandry Association

MEMBERSHIP APPLICATIONS

FISH CULTURE SECTION OF AMERICAN FISHERIES SOCIETY

- FCS Membership for Current AFS members $5.00
  All FCS members must be full members of the American Fisheries Society

Join or pay your membership dues online at fishculture.fisheries.org

WORLD AQUACULTURE SOCIETY (WAS) APPLICATION www.was.org

For details on the different types of memberships and options, please contact the WAS home office at
Tel: +1-225-578-3137 Fax: +1-225-578-3493 Email: judya@was.org

MEMBERSHIP CATEGORY: (Indicate only one)

- Individual (Electronic JWAS) (USD 65/yr) Applies to an individual only
- Individual (E Access) (USD 45/yr) Applies to an individual only
- Student (Electronic JWAS) (USD 45/yr) (Copy of Student ID or Signature of Professor required)
- Sustaining (Electronic JWAS) (USD 105/yr) Applies to any one individual from a company
- Corporate (Electronic JWAS) (USD 255/yr) Allows all employees of one company to attend meeting at Member Rate
- Lifetime (Electronic JWAS only) (USD 1000 with no chapter) Applies to an individual only
- Lifetime (Electronic JWAS only) (USD 1100 with one chapter) Applies to an individual only

CHAPTER OPTIONS:

One chapter included in membership. Mark the chapter you choose.

- Africa
- Asian Pacific
- Korea
- Latin American/Carribean
- United States (USAS)
- None (deduct USD 5)

You can add extra Chapters for USD 5

Total Amount for WAS Membership USD

Please enter this amount under “Membership Dues” section on opposite side of this form.

Fees for memberships are non-refundable.

NATIONAL SHELLFISHERIES ASSOCIATION

For details on the different types of memberships and options please contact the NSA office at:
www.shellfish.org

MEMBERSHIP CATEGORY: (Indicate only one)

- Regular (USD 95/yr)
- Student (USD 50/yr)
- Sustaining (USD 200/yr)

Includes subscription to the Journal of Shellfish Research

Total Amount for NSA Membership USD

Please enter this amount under “Membership Dues” section on opposite side of this form.

NATIONAL AQUACULTURE ASSOCIATION (NAA)

For details on the different types of memberships and options, please contact the NAA home office at:
Tel: +1-850-216-2400 Fax: +1-850-216-2480 Email: naa@thenaa.net Web: www.thenaa.net

For membership in other associations, please contact them directly.
If you need a phone number, contact the Conference Manager worldaqua@was.org.
TRAVEL
Special car rental fares have been arranged with AVIS. You can make reservations at 800-331-1600 or +1-918-624-4338 and mention the special discount code #J770126.

HOTELS
We have arranged for fantastic rates at the recently renovated Town and Country Resort and Conference Center. You can reserve your room by phone or on their website.

Check the conference website for details.

OUR FULL CONFERENCE REGISTRATION INCLUDES:
- Admission to all conference sessions and the trade show
- Admission to the receptions
- Conference Bag and Show Directory
- Refreshment Breaks and Happy Hour
- Abstract Book on USB
- Students receive the full registration package plus the Student Reception. To qualify for the student rate, a copy of your student I.D. is required.

Only pre-registered attendees are guaranteed materials.
## TENTATIVE SCHEDULE

### Monday, February 28
- **Exhibit Set-up**: 10:00 – 6:00
- **Registration Open**: 12:00 – 6:00
- **Welcome Reception**: 6:00 – 8:00

### Tuesday, March 1
- **Registration Open**: 7:30 – 5:00
- **Opening Ceremonies & Plenary Session**: 8:30 – 10:00
- **Refreshment Break**: 10:00 – 11:00
- **Sessions**: 11:00 – 12:30
- **Trade Show Open**: 10:00 – 6:00
- **Lunch (on your own)**: 12:30 – 1:30
- **Sessions**: 1:30 – 5:00
- **Happy Hour & Posters**: 5:00 – 6:00
- **Student Reception & NSA Auction**: 7:00 – 9:00

### Wednesday, March 2
- **Registration Open**: 7:30 – 5:00
- **Sessions**: 8:30 – 10:00
- **Trade Show Open**: 10:00 – 5:30
- **Refreshment Break**: 10:00 – 10:30
- **Sessions**: 10:30 – 12:30
- **Lunch (on your own)**: 12:30 – 1:30
- **Sessions**: 1:30 – 4:30
- **Happy Hour & Posters**: 4:30 – 5:30
- **NAA Auction**: 5:30 – 7:30

### Thursday, March 3
- **Registration Open**: 7:30 – 5:00
- **Sessions**: 8:30 – 10:00
- **Trade Show Open**: 10:00 – 1:30
- **Refreshment Break**: 10:00 – 11:00
- **Sessions**: 11:00 – 12:30
- **Lunch (on your own)**: 12:30 – 1:30
- **NSA Members Luncheon**: 12:30 – 2:00
- **Sessions**: 1:30 – 3:00
- **Exhibit Move-out**: 1:30 – 7:00
- **Refreshment Break**: 3:00 – 3:30
- **Sessions**: 3:30 – 5:30
- **Presidents Reception**: 6:30 – 8:30

### Friday, March 4
- **Registration Open**: 8:00 – 5:00
- **Sessions**: 8:30 – 10:00
- **Refreshment Break**: 10:00 – 10:30
- **Sessions**: 10:30 – 12:30
- **Lunch (on your own)**: 12:30 – 1:30
- **Sessions**: 1:30 – 3:00
- **Refreshment Break**: 3:00 – 3:30
- **Sessions**: 3:30 – 5:00
- **Closing Happy Hour**: 5:00 – 6:00