AES News, Winter and Spring 2002, Vol. 5, Nos. 1 & 2

LETTER FROM YOUR PRESIDENT

Dear AES Members,

In 2003, the AES will have completed its first decade of service to the aquaculture industry and to its members. Even given the limited resources of the AES, as a Society we are providing timely solutions to important problems through conferences, workshops and our official outlet, the journal *Aquacultural Engineering.* Through the leadership and contributions of AES officers that have come before me the AES has made a difference in the international world of aquaculture.

I would like to first thank Past President Barnaby Watten for his leadership and service over the last three years. During his tenure Barnaby promoted the growth of our society with great success as AES membership grew to 224, which is our highest membership ever. As well, Barnaby co-hosted the successful *AES Issues Forum in Shepherdstown*, West Virginia, last November. I would also like to thank departing AES Directors Ivar Warrer-Hansen, James Ebeling, David Brune, Raul Piedrahita, Rod McNeil, and Shulin Chen for serving the AES over the past two years. Departing Past President Ronald Malone also deserves our thanks and recognition for all of the time he spent over the last two years attending meetings with the U.S. Environmental Protection Agency as the official AES representative to the Joint Subcommittee on Aquaculture, Aquaculture Effluents Task Force. Finally, Brian Vinci's service to the AES as our Secretary/Treasurer deserves our appreciation and thanks. Having served as AES Secretary /Treasurer in the past, I know that the Secretary/Treasurer responsibilities are very time consuming for a volunteer position. Brian's meticulous work, organizational skills, and attention to detail have really improved AES operations.

I am happy to report that the Aquacultural Engineering Society was well represented during *Aquaculture America 2002* with three AES Workshops that were held January 29 in San Diego, California, USA. Up next, the AES will be participating in the *4th International Recirculating Aquaculture Conference* to be held at the Hotel Roanoke and Conference Center, in Roanoke, Virginia, USA, on July 18-21, 2002. Also, the AES (i.e., Kelly Rusch) is now in the process of developing engineering oriented special sessions and workshops for the *Aquaculture America 2003 Conference and Tradeshow*, which will be held February 18-21, 2003, at the Commonwealth Convention Center in Louisville, Kentucky, USA. John Colt has volunteered to organize the next *AES Issues Forum*, which will be held in Seattle, Washington, USA, in the fall of 2003. Please read the contents in this newsletter and visit the AES webpage (www.aesweb.org) to learn more about these upcoming meetings.

The AES has been fortunate to be able to call *Aquacultural Engineering*, by Elsevier Scientific Publishers, our official journal. *Aquacultural Engineering* is a prestigious, international, peer-reviewed journal that provides a forum for the publication of articles on all aspects of unit process design, process control, bioengineering, and full-scale operations. As such, AES members are encouraged to support *Aquacultural Engineering* and when possible to submit high quality manuscripts to this journal.

The AES Publication Committee, chaired by Tim Pfeiffer, is also looking for informative engineering related articles that can be published in *Aquaculture* magazine as part of the AES Column or Feature Article. These articles are excellent public relations for the AES. If you are interested in contributing an article, please contact Tim Pfeiffer at 870-543-8094 (phone) or tpfeif12@earthlink.net (email).

As you can see, the AES has quite a long list of activities. Running this society is only possible because of the high level of participation by our members. We need your help to face future challenges and establish a more visible and respected presence for our profession and our contribution to aquaculture. If you would like to be involved in any of the society's activities, please contact me and I will put you in touch with the appropriate chairman. Also, please contact me if you have any suggestions or comments. My email is: s.summerfelt@freshwaterinstitute.org and my phone number is (304) 870-2211.

I hope to see you in Roanoke this July!

Best Regards,

Steve

Steven Summerfelt, President
Aquacultural Engineering Society

NEWS FROM ELSEVIER SCIENTIFIC PUBLISHERS

From the Aquacultural Engineering *Editor-in-Chief*

Dear Colleague,

As editors of *Aquacultural Engineering*, we are pleased to invite you to submit your research in this rapidly developing field. The journal is peer-reviewed, international, and provides a forum for the publication of articles on all aspects of unit process design, process control, bioengineering, and full-scale operations.

Aquacultural Engineering has established a strong reputation with a good position in the SCI Journal Citation Reports. Moreover, it is indexed in main bibliographic databases such as Current Contents and Aquatic Sciences & Fisheries Abstracts. Papers are submitted from all over the world, both from academic as well as the consulting engineering and commercial sections.

In addition to Research Papers, Short Communications and Review Articles, we will continue to publish Special Issues dedicated to topics of current interest. If you have a question about submission of a given manuscript to the journal, you are encouraged to e-mail or fax the outline of the manuscript to us prior to formal submission.

With its comprehensive, timely and unique coverage, *Aquacultural Engineering* is the journal you need to stay informed on all the latest advances and developments in aquacultural engineering.

We are dedicated to the further development of *Aquacultural Engineering* within a dynamic and challenging environment, and we'll look for new opportunities to strengthen its position.

We will continue to guarantee rapid and high quality peer-review of your submitted manuscript, followed by timely publication. This guarantees that your results and ideas will reach the scientific community without delay.

Aquacultural Engineering is the official journal of the Aquacultural Engineering Society. Membership in this society allows you to purchase the journal at a significantly reduced rate.

Looking forward to reading your paper.

Dr. John Colt,
Editor for the Americas

Jaap van Rijn, Ph.D.
Editor for the rest of the World

P.S. You can find out more about submitting papers to Aquacultural Engineering by checking the Elsevier Science homepage: www.elsevier.nl/locate/aquaeng.

Contents Direct

ContentsDirect, the free e-mail alerting service, delivers the table of contents for AQUE directly to the PC of interested scientists, prior to publication. The quickest way to register for ContentsDirect is via the Internet at: http://www.elsevier.nl /locate/ContentsDirect

Information about AQUE is also available on the World Wide Web at the following addresses: http://elsevier.nl/locate/aquaeng or http://www.elsevier.com/locate/aquaeng.

If you don't have access to the Internet you can register for this service by sending an e-mail message to cdsubs@elsevier.co.uk - specifying the title of the publication you wish to register for.

On-Line Article Status Information System

Elsevier Science offers a service called OASIS which stands for On-line Article Status Information System. With this service authors of articles which are currently in production at Elsevier can obtain the following information on the status of their article:

- general production status (in preparation, in proof, in issue)
- date of publication and offprints dispatch date
- issue, volume and page number

For privacy, information on articles is password-protected. Authors need to key in "Elsevier's Reference" code, (which is mentioned in themacknowledgement letter sent to the author by our Production Department in Shannon) and the name of the corresponding author. Authors can get to OASIS through the journals homepage or at the following address: http://www.elsevier.nl/oasis

Newsletter

The *AES News* is printed quarterly by the Aquacultural Engineering Society. You can receive the *AES News* by joining the Aquacultural Engineering Society. If you would like to discuss the contents of the *AES News*, or, if you would like to contribute information to the *AES News*, please contact either of the two Co-Editors:

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UPCOMING MEETINGS

4th International Conference on Recirculating Aquaculture

You are invited to participate in the Fourth International Conference on Recirculating Aquaculture, to be held at the Hotel Roanoke and Conference Center (www.hotelroanoke.com) Virginia, on July 18-21, 2002. The conference is designed for individuals in industry, government, or academia who are involved with recirculating aquaculture. This conference continues to feature the leading experts in recirculating aquaculture who will be presenting over 75 papers in 2002, as well as poster sessions. Ample time is allotted during all sessions for questions and free discussions. The 1500+ participants from the U.S. and 30 foreign countries that have attended the past three conferences indicated that some of the most popular aspects were the trade show, plenary session, and continuous break service forum. Equipment manufacturers and salespersons, producers, academics, regulators, investors, and others interested in the recirculating aquaculture field all gather in the trade show area to "meet and greet" and "cuss and discuss" pressing issues associated with recirculating aqua-culture. The 2002 conference continues to accent informal learning opportunities with expanded trade show hours and a reception following the plenary session on Thursday night.

Thanks to Michael Timmons, the AES has organized two Special Sessions on Commercial Recirculating Systems (see below). In addition to several contributed paper sessions (see below), this years recirculating aquaculture conference will feature nine invited paper sessions in the following topic areas: Nutrition, Genetics and Physiology, Use of Recirculating Technologies in Marine Shrimp Culture, Waste Management, Systems, Fish Health, Economics and Business Management, Recirculating Systems for Coldwater Culture, and Species. **For further information** about the conference and symposia, please visit the official conference website at (www.conted.vt.edu/aquaex02.htm) or contact Dr. George Flick, Virginia Tech, Mail Code 0418, Blacksburg, Virginia 24061, telephone: (540) 231–6965, or e-mail your questions to: aqua@vt.edu.

Friday, July 19, 2002

AES Session 1 - Commercial Recirculating Systems. Moderator - M. Timmons

9:30-10:00	*S.J. Wilton*	Design of a 50 T Salmon Smolt Operation
10:00-10:30	*G. Beckman*	Design of a 100 ton Flat Fish Farm
11:00-11:30	*S. Van Gorder*	Design of a 65 Ton Recirculating System for High-Valued Species
11:30-12:00	*Round Table Discussion*	(led by M. Timmons)

AES Session 2 - Commercial Recirculating Systems. Moderator - J. Ebeling & S. Summerfelt

2:00-2:30	*A. de Bondt*	Profitable Recirculating Aquaculture Systems from Holland
2:30-3:00	*K. Brockdorff*	Moving Bed Technologies
3:30-4:00	*R. Jóhannsson*	Design of a Large RAS Tilapia Farm Using Geothermal Water
4:00-4:30	*Round Table Discussion*	(led by J. Ebeling and S. Summerfelt)

Contributed Paper Session

2:00-2:30	*J. McElwee*	The Irish Salmon Recirculation Story - The Full Circle
2:30-3:00	*R.N. Patterson*	Micro-Particles in a Cold-Water, Recirculating Aquacultural System for Atlantic Salmon Juveniles: Initial Observations
3:30-4:00	*J. Jug-Dujakovic*	Pilot Production of Yellow Perch (*Perca flavescens*) in a Commercial Closed Recirculation System
4:00-4:30	*J. McElwee*	The Irish Flatfish Story...Thus Far
4:30-5:00	*H. Wang*	The Artificial Seed-Rearing Experiment of Common Oriental Clam

Saturday, July 20, 2002

Contributed Paper Sessions (some papers will be presented concurrently)

9:00-9:30	*J.M. Ebeling*	Evaluation of Chemical Coagulation-Flocculation Aids and Acid Mine Drainage Residual for the Sequestering of Phosphorus from Intensive Recircualting Aquaculture Effluent Discharge
9:30-10:00	*J. Veerapen*	Solids Removal Modeling in Recirculating Aquaculture Systems
10:00-10:30	*X. Miao*	Utilization of Aquacultural Waste Water in Vegetable Hydroponic Production System
11:00-11:30	*J.M. Ebeling*	Performance Evaluation of a Full-Scale Intensive Recirculating Aquaculture Systems Waste Discharge Treatment System
11:30-12:00	*X. Miao*	Adaptability and Filtration Efficiency of Different Grass Cultivation System for Aquacultural Wastewater Treatment
2:00-2:30	*R. Smith*	Requirements of the Clean Water Act
2:00-2:30	*C.T. Weeks*	Manageability Concerns in Engineering and Design of Recirculating Aquaculture Systems
2:00-2:30	*T. Lenger*	Evaluation of Supplemental Solids Removal Effects on Nitrification Rates in Floating Bead Filters
2:30-3:00	*N. Renaud*	Energy Loss from Fish Tanks and Degassing Towers at Recirculating Aquaculture Facilities
2:30-3:00	*N. Hazon*	A New Recirculation System for Rearing Juvenile Atlantic Halibut
2:30-3:00	*S. Christian*	Rugged, Real-Time, Optical Sensors for Recirculating Aquaculture Systems

UPCOMING MEETINGS

3:00-3:30	*D. Conijeski*	Economic Evaluation of Pure Oxygen Sources for Intensive Recirculating Fish Culture Systems
3:00-3:30	*L. Obaldo*	Shrimp Zero-Exchange Culture System: Preliminary Results, Modeling and Analysis
3:00-3:30	*M.M. Smith*	The Long Path, Plug Flow, Submerged Biological Biofilter
4:00-4:30	*A. Mathur*	Use of Low Cost On-Site Oxygen Generation Systems
4:00-4:30	*N. Mozes*	Marine Water Recirculating Systems in Israel - Performance, Production Cost Analysis and Rationale for Desert Conditions
4:00-4:30	*S.T. Summerfelt*	Evaluation of Full-Scale Carbon Dioxide Stripping Columns in a Coldwater Recirculating System
4:30-5:00	*P.J. Meng*	Two Economical Types of Seawater Recirculating Aquaculture Systems Water Quality Investigation for Hi-Q Bio-Tech International
4:30-5:00	*E.M. Hallerman*	Comparative Analysis of Performance of Three Biofilter Designs in Recirculating Aquaculture Systems

Cornell University and the Freshwater Institute: 8th Annual Aquaculture Water Reuse Systems Short Course

This one-week course is intended to give a thorough coverage of the design, operation and management of water reuse systems for finfish. The "hands-on" course is offered at the Freshwater Institute in Shepherdstown, WV from July 22 to July 26, 2002. On Monday there is one tour at 8:00am and another tour at 12:00pm. There will be lectures and labs on Tuesday - Friday from 8:00am - 5:00pm. The course is also available in a Distance Learning environment in English or Spanish. Limited coverage will be given to engineering economics. Members of the Cornell Aquaculture Program and The Freshwater Institute will teach the course. At the conclusion of the workshop, individuals should be able to design their own water reuse systems and have a fundamental knowledge of the principles influencing design decisions. The following topics will be addressed:

- System carrying capacity (oxygen, solids, ammonia, carbon dioxide, and constraints)
- Space and volume requirements
- Flow requirements and fluid mechanics
- Nitrification principles and biofilter design
- Water chemistry
- Monitoring and control system
- Tour of local aquaculture facilities

The Freshwater Institute's research facility (RR1, Box 256 Turner Rd., Shepherdstown, WV 25443) is housed inside a 10,000 square foot heated space. Currently, artic char and rainbow trout are being cultured; breeding and hatching facilities are in operation.

The cost of the "hands-on" short course is $750.00, which includes the new Recirculating Aquaculture Systems book, daily breakfasts, lunches, and banquet dinner. Enrollment is limited and a $250.00 deposit is required by June 17, 2002. The cost of the "distance learning" short course is $175.00, which includes a CD Rom, the new Recirculating Aquaculture Systems book and participation in a daily instructor chat room which requires Internet access (student option). Please make checks payable to Cornell University and mail to Brenda Marchewka at the address below or pay by credit card (see Registration Form on website: http://www.bee.cornell.edu/extension/aquaculture). For more information contact: Brenda Marchewka, Cornell University, Biological and Environmental Engineering, 312 Riley-Robb Hall; Ithaca, NY 14853, Phone: (607) 255-2495, Fax: (607) 255-4080, E-mail: bls19@cornell.edu

Aquaculture America 2003

The World Aquaculture Society will be hosting *Aquaculture America 2003*, which will be the next meeting of the US Chapter of the World Aquaculture Society. The *Aquaculture America 2003 Conference and Tradeshow* will be held February 18-21, 2003, at the Commonwealth Convention Center, Louisville, Kentucky, USA. For more information on the overall program and tradeshow at *Aquaculture America 2003*, please contact John Cooksey, WAS Director of Conferences (phone: +760-432-4270; e-mail: worldaqua@aol.com), or visit the World Aquaculture Society's website at: http://www.was.org. Kelly Rusch will be organizing the AES sessions and workshops to be held during *Aquaculture America 2003*.

The 2003 AES Issues Forum

Dr. John Colt will be organizing the third *AES Issues Forum*, which will be held during the fall of 2003 in Seattle, Washington, USA. The AES Issues Forum is held roughly every two years and is intended for members to gather, present, listen to, and reflect upon the recent advances that have been made in the field of aquacultural engineering. Discussion and audience participation are encouraged following each presentation and also during several social events. The 1999 and 2001 *AES Issues Forums* were very popular. The first *AES Issues Forum* was held in 1999 on the campus of North Carolina State University in Raleigh, North Carolina, and the second *AES Issues Forum* was held November 11-14, 2001, in Shepherdstown, West Virginia. Over 80 engineers, scientists, and industry leaders attended the last *AES Issues Forum*. A proceedings that contains all the papers presented during the *2001 AES Issues Forum* is now available to order through the Natural Resource, Agriculture, and Engineering Service (NRAES #157). Contact NRAES if you are interested in purchasing a copy: NRAES, Cooperative Extension, 152 Riley-Robb Hall, Ithaca, New York, 14853-5701 (phone: 607-255-7654; fax: 607-254-8770; or Email: nraes@cornell.edu).

OTHER NEWS

New AES Officers And Directors

The AES Officers and Directors plan and coordinate our society's participation in conferences and special work groups. The AES Directors serve a two-year term and the Officers serve a one-year term. The rotation of AES Officers and Directors occurred at the end of the AES Annual Meeting, which was held during *Aquaculture America 2002* in San Diego, California this past January. The changes in AES Officers and Directors follow:

New Officers	Departing Officer	Returning Directors	New Directors	Departing Directors
Pres:Steven Summerfelt	Ronald Malone	Ep Eding	James Muir	Ivar Warrer-Hansen
1st VP:Michael Timmons		Kuen-Hack Suh	Tim Pfeiffer	James Ebeling
2nd VP:Kelly Rusch			Brian Brazil	David Brune
Past Pres: Barnaby Watten			Sean Wilton	Raul Piedrahita
Sec/Tres: Brian Vinci			Kelly Rusch	Rod McNeil
			Wayne Peters	Shulin Chen

AES Superior Paper Award

The AES Paper Awards Committee selected the 'Superior Paper Award' from all papers published in Elsevier's journal *Aquacultural Engineering* in 2000. The 'Superior Paper Award' was given to two papers this year: one award to Steven T. Summerfelt, Brian J. Vinci, and Raul H. Piedrahita for their paper titled "Oxygenation and carbon dioxide control in water reuse systems", and one award to Eric L. Peterson, Jonathan A. Harris, and Lal C. Wadhwa, for their paper titled "CFD modeling pond dynamic process." Also, two 'Honorable Mention Paper Awards' were given: one award to Timothy J. Pfeiffer and Kelly A. Rusch for their paper titled "An integrated system for microalgal and nursery seed clam culture" and one award to Caye M. Drapcho and David E. Brune for their paper titled "The partitioned aquaculture system: impact of design and environmental parameters on algal productivity and photosynthetic oxygen production." AES Paper Award Committee Chairman Dr. Fred Wheaton thanks all reviewers who participated in this year's selection process.

AES Committee Chairs and Liaison Appointments

AES members who want to be more active in our society should join one of the many AES Committees by contacting the appropriate AES Committee Chair. The following is a list of the AES Committee Chairs and Liaison appointments for 2001.

BOD Chairman	AES President
Nominating Committee Chair	AES Past President
AES Liaison with other societies (WAS, EAS, etc.)	Barnaby Watten
Publications Committee Chair	Tim Pfeiffer
New Products Publications Co-Chairs	John Colt and Mike Timmons
Promotions and Meeting Committee Chair	Tim Pfeiffer
Awards Committee Chair	Barnaby Watten
JSA Aquaculture Effluents Task Force Representative	Ron Malone
AES Proceedings Editor	Mike Timmons
AES News Co-editors	Steven Summerfelt and Mike Timmons
AES Webmaster	Brian Vinci
AES Listserv Manager	Raul Piedrahita
Corporate Sponsor Liaison	AES Secretary/Treasurer
Program Chairs:	
4th International Recirc Conference in Roanoke, VA	Mike Timmons
Aquaculture America 2003 in Louisville, KY	Kelly Rusch
World Aquaculture 2003 in Salvador, Brazil	unidentified
2003 AES Issues Forum in Seattle, WA	John Colt

OTHER NEWS

AES Articles in Aquaculture Magazine.

One of the objectives of the AES Publication Committee, chaired by Tim Pfeiffer, has been to develop informative articles that can be published in aquaculture trade magazines. The AES has an agreement with *Aquaculture Magazine* to regularly publish engineering related articles. These articles are excellent PR for the AES. However, the AES needs volunteers to write more articles. The articles are generally popularized versions of the technical aspects of aquaculture production. Each article should be less than 2,000-3,000 words. Longer articles are welcome, but are generally broken into parts for sequential issues. If you are interested in contributing an article, please contact Tim Pfeiffer at 870-543-8094 (phone) or tpfeif12@earthlink.net (email).

AES Web Site

The Aquacultural Engineering Society world wide web site address is:

www.aesweb.org

The AES web site has sections for general AES information, new happenings or business, conference information, membership services, publications information, and links to other sites. The AES newsletter is now available at the site, with old issues archived for your reference. Currently those interested in becoming members of the AES may apply online. The AES web site accepts secure online credit card transactions for membership applications and membership renewals. If you have any suggestions or contributions to the web site please contact Brian Vinci at b.vinci@freshwaterinstitute.org.

AES Conference Proceedings Available From NRAES and WAS

The Natural Resource, Agriculture, and Engineering Service (NRAES) has maintained a strong partnership with the AES since the AES was founded in 1993. To date, the NRAES has published (or listed) the conference proceedings for every major AES meeting where proceedings were produced. Many in the aquaculture industry have come to appreciate the quality and relatively low price of these valuable proceedings, and they are a real asset to the AES. The collection of aquaculture and aquacultural engineering related conference proceedings offered by NRAES includes:

- *Engineering Aspects of Intensive Aquaculture* (1991. NRAES-49; 348 pages)
- *Aquacultural Engineering and Waste Management* (1995. NRAES-90; 384 pages)
- *Successes and Failures in Commercial Recirculating Aquaculture* (1996. 2 volumes, NRAES-98; 656 pages)
- *Marketing and Shipping Live Aquatic Products* (1996. NRAES-107; 288 pages)
- *Advances in Aquacultural Engineering* (1997. NRAES-105; 393 pages)
- *Tilapia Aquaculture* (1997. 2 volumes, NRAES-106; 808 pages)
- *Proceedings of the Second International Conference on Recirculating Aquaculture* (1998, VA-1; 409 pages)
- *Proceedings of the Third International Conference on Recirculating Aquaculture* (2000, VA-2; 360 pages)
- *Proceedings from the 2001AES Issues Forum* (2001. NRAES-157; 323 pages)

These proceedings are described in more detail at the AES website (www.aesweb.org). The AES website also provides a link to the NRAES website (www.nraes.org) where the proceedings can be purchased. To improve the visibility of these proceedings, these proceedings have also been advertised at the World Aquaculture Society's (WAS) secure online store, which can be accessed by following links to the online store after entering the WAS website (www.was.org).

Job Listing

The NOAA Fisheries Milford Aquaculture Laboratory anticipates within the next few months hiring a Chemist/Chemical Engineer at the GS-11/12 level. This will be a full-time, permanent position. In addition to basic requirements for demonstrated professional knowledge, skills, and abilities in chemistry and chemical process analysis and design, the following capabilities are sought:

Develops, implements, and administers plans, programs, and methodology connected with fishery aquaculture. Resolves and advises on a variety of aquatic chemistry problems; develops methods for monitoring and improving seawater quality; develops, tests, and implements various methods for modeling and establishing chemical budgets and balances in aquaculture systems; will apply chemical process-engineering methods to these tasks and to the development of recirculating seawater culture systems.

The announcement will be posted on the US Department of Commerce jobs web site http://www.jobs.doc.gov where all pertinent information will be provided and on-line application will be possible. Contact Gary.Wikfors@noaa.gov with questions or for updated information on status of the posting.

2002 MEMBERSHIP DUES

The AES is now collecting 2002 membership dues. If you have not already joined the AES for 2002, you can still join and receive eight issues (two 2002 volumes) of the journal *Aquacultural Engineering*, AES Newsletters, and the AES Member Directory.

New Books

Fish Hatchery Management, Second Edition

Edited by Gary A. Wedemeyer, 751 pages
Published by American Fisheries Society (Bethesda, MD) in 2002.
List Price: $71.00, hardcover; $56.00, paper
Member Price: $49.00, hardcover; $39.00, paper
Stock #550.40; ISBN 1-888569-26-3

This second edition expands and updates the original Fish Hatchery Management, the preeminent fish culture manual in North America since 1982, which has been used in universities and USFWS training centers nationwide to train new generations of culturists. The new edition has been completely rewritten by experts to include major advances in hatchery operation, in practical knowledge about raising high-quality fish, and in optimal use of cultured fishes in management programs. This up-to-date volume is greatly needed as a training tool and day-to-day hatchery resource. Like the first edition, the book includes a great deal of information about particular species, but its focus remains on the requirements and practical operation of culture systems. The new edition covers advances in production, water issues, transportation, stocking, open systems, controlled systems, semi-controlled systems, broodstocks and spawning, nutrition and feeding, fish health, and special considerations. Authors have developed chapters for relevance to both private and public fish culture. To order, please visit the website afspubs@pbd.com or call the American Fisheries Society Publication Fulfillment office at (770) 442-8633 ext. 257, or Fax (770) 442-9742.

Recirculating Aquaculture Systems

By M. B. Timmons, J. E. Ebeling, F. W. Wheaton, S. T. Summerfelt, and B. J. Vinci
650 pages, hardcover
Published by Cayuga Aqua Ventures (Ithaca, New York) in 2001.
List Price: $70.00 plus shipping
ISBN 0-9712646-0-0

The objectives of this text are the practical application of aquacultural engineering and how to develop an aquatic production system. It provides the reader with essential information necessary to get started in aquaculture production and it emphases practical information rather than in-depth theoretical discussions. It does not provide the reader with information on nutrition, genetics, basic biology, marketing, and all of the other areas important to development of a successful aquaculture operation. Many of these topics are touched on in the text, but are presented only in sufficient detail to allow the reader to understand the relationship of each of these aspects to production of fish. There is no attempt to present in-depth discussions of these topics. Rather the object is to provide sufficient information so the reader can: 1) look at a system and make a good judgment as to how well the systems will operate, 2) work with a systems designer to develop an aquatic production system of your own, and 3) know what to look for when shopping for aquacultural production systems.

The authors of this text have over 90 years of combined experience in aquacultural engineering. The book includes chapters on: (1) Recirculating Aquaculture Technology; (2) Water Quality; (3) Fluid Mechanics and Pumps; (4) Mass Balances & Loading Rates; (5) Culture Units; (6) Solids Capture; (7) Biofiltration; (8) Gas Transfer; (9) System Monitoring and Control; (10) Waste Management and Disposal; (11) System Management; (12) Ozonation and UV-Irradiation; (13) Fish Health Management; (14) Building Environmental Control; (15) Economic Realities & Management; (16) Fish Nutrition and Feeds; and (17) Software Programs (with CD). The Software Programs Chapter and CD include the following programs: Oxygen Design (Workbook), Fish Tank Design (Workbook), Pipe Flow Design (Workbook), Cost Analysis (Workbook), CO2 Control Model, Low Head Oxygenator Model, and AIRPUMP.

The book is available directly from Cayuga Aqua Ventures, 126 Sunset Drive, Ithaca, NY 14850; phone/fax 607 266 0721, or by email to: mbt3@cornell.edu. Cost of the book is $70 + $6 shipping in North America (shipping is $20 air express to other countries or $10 for seamail delivery of 2 to 3 months).

Aquaculture and the Environment in the United States

Edited by Joe Tomasso, 277 pages, paperback
Published by World Aquaculture Society (Baton Rouge, LA) in 2002.
List Price: $60.00
Member Price: $35.00 ISBN 1-888807-09-1

The rapid expansion of aquaculture around the world coupled with a general increase in the appreciation of quality environments has led to questions about the impact of aquaculture on the environment. These questions apply to the United States as well as the rest of the world. In support of the public-policy debate on these issues within the United States, the U.S. Aquaculture Society (a Chapter of the World Aquaculture Society) has sponsored this book. It is hoped the book will serve as a primer on the relationship between U.S. aquaculture activities and the environment.

This perfect bound, soft cover, 277-page book contains 12 chapters. It is the first book produced by the United States Aquaculture Society, a chapter of the World Aquaculture Society. The first chapter sets the stage by describing global aquaculture production with emphasis on the United States. Chapter 2 details the water budgets for aquaculture production. Chapters 3-6 describe the environment impacts with emphasis on management of ponds; raceways; cages and net-pens; and recirculating aquaculture systems. Chapter 7 discusses the environmental interactions of bivalve shellfish aquaculture. Chapters 8-11 are discipline specific chapters presenting valuable information on nutrient reduction through diet and feeding strategies, genetic and ecological implications of escaped and intentionally stocked cultured fishes, and the potential risk of pathogens to wild fish populations. The final chapter provides information on economics of resolving environmental issues in U.S. aquaculture.

The book is available directly from the World Aquaculture Society (143 J. M. Parker Coliseum, Baton Rouge, LA 70803; phone 225-388-3137) and can be ordered online at http://www.was.org

AES Sponsors

The AES is looking for sponsors within the aquaculture industry to support the cost of producing the AES News. The sponsors listed below have donated generously to support the AES in 2001. For this donation, the AES will be inserting a one-page product literature sheet in one of the newsletter mailings, and list the vendor as an AES supporter in four consecutive newsletters. Please contact one of the AES News Co-Editors if you would like to be a sponsor.

Aquatic Eco-Systems, Inc.
1767 Benbow Court, Apopka, FL 32703
ph: (407) 886-3939
fax: (407) 886-6787
e-mail: aes@aquaticeco.com
web site: www.aquaticeco.com

Aquaculture Systems Technologies, LLC.
P.O. Box 15827, New Orleans, LA 70175
ph: (800) 939-3659
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