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Milwaukee Selected for the 2016 North Central Aquaculture Conference

Crowne Plaza Airport chosen as conference hotel

Ames, Iowa (July 28, 2015) --- As farmers are being called on to produce more food on less land, aquaculture has the potential to step in to help fill this demand with safe, sustainable, locally produced food. With this in mind, the North Central Regional Aquaculture Center (NCRAC), the Wisconsin Aquaculture Association and surrounding states aquaculture associations are in the process of planning for the 2016 North Central Regional Aquaculture Conference which is scheduled to take place March 12-13, 2016 in Milwaukee, Wisconsin at the Crown Plaza Milwaukee Airport Building on the successful 2014 conference held in Ohio, this conference is a continuation of these regional conferences being developed with the goal of presenting current aquaculture information for the commercial aquaculture community as well as offering a Trade Show with vendors representing a wide variety of aquaculture products. "This conference will provide a great opportunity for farmers to listen to the latest advances, updates, and techniques from many well-known experts in the industry," stated Joe Morris, Director of NCRAC.

This conference will host a large Trade Show and numerous talks from industry leaders, farmers and researchers on topics of interest to a wide spectrum of aquaculture. Speakers and farmers from the NCRAC region will be in attendance, providing attendees with opportunities to network, access to resources and knowledge to further your businesses.

At this time a draft schedule includes WAA Board meetings, WAA Annual Members meeting and WAIAC meeting on Friday, March 11, with the conference schedule running from Saturday morning to mid-day on Sunday. The Cooking Demo, Evening Networking and Silent Auction are slated for Saturday evening. NCRAC will be holding their business meetings preceding the conference.

LODGING INFORMATION

The Crowne Plaza Milwaukee Airport
6401 South 13th Street, Milwaukee

Call the Crowne Plaza at 414-764-5300 and mention Wisconsin Aquaculture Association for the conference lodging rate of \$107/night (single or double) plus tax of 15.1%. The room block will be released on February 10, 2016, so get your reservation made as soon as possible as the regular rate starts at \$130. Please check hotel cancellation policy when booking

There is plenty to do if you want to take some extra time or if your family comes along. The Midwest Foodservice Expo will run from March 7-9 at the Wisconsin Center. Milwaukee and the surrounding area offers museums, breweries and a zoo, and for shopping experience there are chocolatiers, antiques & collectibles, gourmet foods, cheese shops, indoor public market, and more. No matter what your dining tastes are, cuisines range from Italian, Asian, French, Indian, South American, and Mexican to seafood, steak, and American.

Registration fees, conference schedule, topics and more information will be posted on our website as details are firmed up.

2015 Annual Picnic to be Held at Gollon Bait and Fish Farm

The 2015 Annual Members Picnic will be held at the Gollon Bait and Fish Farm on September 11. The Gollons always put on a great fish fry and this should be no exception. Dave Sr, Dave, Tim, and Mike are looking forward to showing the farm and their recent expansion. The last time we had the picnic at their farm was in 2004, so there have been many changes over the last 10 years which most of you have not seen. This promises to be a very interesting farm tour for everyone.

The picnic will start at 12:30 pm, followed by farm tours. The WAA board meeting will be from 8:30-10:30am, WAIAC meeting from 10:30 am to 12:30 pm.

Location:
5117 State Road 191, Dodgeville
Office phone 609-935-2098

DNR Announces Strategic Alignment Effort

The following excerpts were taken from a Northwoods River News article by Richard Moore. For the full story go here <http://www.rivernewsonline.com/main.asp?SectionID=6&SubSectionID=47&ArticleID=68737>

Agency leaders move to assert control with direct line authority

The Wisconsin Department of Natural Resources unveiled a significant reorganization Tuesday, July 28, among other things abolishing its water division and moving its major environmental management programs into a newly minted bureau.

Continued on page 4

The CREEL

September 2015 Volume 48* * * Number 3

WISCONSIN AQUACULTURE ASSOCIATION

www.wisconsinaquaculture.com

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AQUACULTURE OUTREACH SPECIALIST –

UW EXTENSION - Extension is available to help farmers with any questions you may have. Their knowledge ranges from all fish cultures and all types of operation, from startup to established. There is no fee to use this service.

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If you are interested in joining any committee, please contact any committee member. The effectiveness of our committees and our organization are based on membership participation.

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Creation, review and development of business development tools for aquaculture

Peter Fritsch

Research & Education

Coordination and review of research, training, educational programming

Dan Gruendemann
Jim Held

Regulatory Policy

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MEMBERSHIP CATEGORIES

Active (voting): \$50/ year, Associate (non-voting): \$25/ year
Group(1 vote): \$75/ year, All memberships RUN FROM January to December and include annual subscription to *The CREEL*

The CREEL reaches many potential customers four times per year. If your business involves the growing or selling of any aquaculture product or any necessary equipment, feed or services, advertising will be a great benefit to you.

The CREEL goes to press the 1st of February, May, August, and November. Please submit photo-ready ad copy and payment to the Secretary/Editor 1 week prior to this for inclusion in the upcoming issue. Rates per issue are as follows:

1/8 page: \$30; 1/4 page: \$40; 1/2 page: \$60; Full page: \$100

Fate of UW Extension Aquaculture Program Still Uncertain

With Governor Walker's line veto of the funding for the UW Extension Aquaculture Specialist position, Jim Held is looking at retiring sometime in September with the termination of the UW Extension Aquaculture Program. This July the Joint Committee on Finance had included permanent funding for one position in its budget which was then passed by both the Senate and Assembly. As the University took a \$250 million budget cut, the funding was to come out of the tribal gaming money, using UW-Stevens Point/Northern Aquaculture Demonstration Facility as the pass through for UW-Extension, leaving the existing Aquaculture Specialist Program intact under Extension. At this writing, there have been inquiries made in an attempt to see if last minute funding can be found to avoid the shutdown of this program.

In 2007 this program was created and 3 extension agents hired. Over the ensuing years, funds were found via earmarks that U.S. Representative Dave Obey supported, one time money within the University, and finally grant money, but permanent funding was elusive with the downturn in the economy. Ultimately Sarah Kaatz left, followed by Ron Johnson who recently retired, both with the hope that financial support could be found for a reduced workforce.

A select few industry members worked tirelessly in investigating different avenues for money and we have asked you, our members, to make your voices, concerns and support be known by contacting your legislators. The legislators, in particular, Senators Tiffany and Marklein, sought and received support from their peers with the inclusion of permanent funding in the 2015-2017 budget. And with Governor Walker showing support for the expansion of the industry with his Walleye Initiative, we thought we had the final piece that was needed. On July 12 we were greeted with the news that the funding was line item vetoed: *In his summary explaining vetoes, Walker says, "These sections provide tribal gaming funding of \$100,000 annually for the Aquaculture Demonstration Facility, to fund a Univer-*

sity of Wisconsin System-Extension aquaculture specialist position. I am vetoing these sections because I object to the unnecessary use of tribal gaming funding for this purpose, and believe that if the University of Wisconsin System believes a position is needed to carry out the mission of the Aquaculture Demonstration Facility, it may reallocate system resources." (WSAU News<<http://wsau.com/news/articles/2015/jul/12/uw-stevens-point-impacted-by-budget-vetoes/>>). Needless to say, we were highly disappointed and felt left down.

The UW-Extension Aquaculture Program is vital to this industry with Wisconsin being the biggest producer of fish in the Midwest.

In Wisconsin:

- Aquaculture sells \$14.1 million in fish and minnows
- Aquaculture contributes \$21 million in economic activity
- Aquaculture pays over \$1.2 million in taxes (excluding K-12 taxes)
- 97% of the 1.4 million anglers use live bait and contribute to the \$2.7 billion sport fishing industry

Wisconsin is:

- Number 1 in Midwest (9 states)
- Number 2 in baitfish in US
- Number 6 in game fish in US
- Number 9 in US trout production

Wisconsin top aquaculture products in sales dollars are:

- Baitfish \$4.65 million
- Trout \$4.58 million
- Game fish \$3.07 million

(Data taken from "Wisconsin Aquaculture Industry: Value and economic impact" published in 2008)

We strongly support and hope for the continued operation of this program and the position that Jim Held currently holds. *Cont on page 4*

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The CREEL is published quarterly, March, June, September and December; WAA welcomes input and involvement from all interested parties.

Unless otherwise indicated, all articles are authored by *The CREEL* editor and/or WAA editorial committee. Editorial comments pertinent to other submissions are italicized and noted in parenthesis (ed.)

All opinions expressed in *The CREEL* are those of the contributor/author and not necessarily those of the Wisconsin Aquaculture Association, its officers or directors.

From the Editor

I do not profess to know everything or be an expert, but from my unique position I have seen the web of influences and interactions involved with our industry and its many different stakeholders. The aquaculture industry has made significant strides over the last 9 years. We have always had passionate people who have been WAA members, served on the board and worked at improving the industry in this state. It has been a long and tough road with many ups and downs, but the founders and early members of the association would be proud at what has been accomplished.

One of the things that has made the last 9 years different has been that the state hired 3 aquaculture extension agents to assist the industry and help it move forward. They have been able to do things that the industry and farmers alone have not been able to efficiently and effectively attain due to 2 things - 1) between them, their thorough knowledge of the aquaculture industry, their resources and experience have helped many of you, and 2) they haven't been restrained by needing to split their time between moving the industry forward and trying to run a business. We would have never been able to make the changes in the regulatory climate without them making the regulations more understandable and without their ability to be effective liaisons with the departments. We would have never had the time to devote to the numerous workshops that have been held and make them affordable for even the smallest of operations. They have helped to expand our conferences while holding our costs down. They have been ambassadors of the industry to the public. In addition to farm visits, they have visited many schools and held talks and classes, encouraging the next generation of farmers. They have been able to offer their services, knowledge and resources to any fish farmer without charging any fees. Their mission is/was to make help you succeed.

Even with the support of our legislators, it is regrettable that even as we continue to improve economic conditions in our state for our industry, we are on the verge of losing one of our most significant resources that the industry has ever had. We had 3 aquaculture extension agents who served the entire state and were at the disposal of all 26,000+ registered fish farms and any who were interested in getting into the business, and, at the moment, we are now down to one position. I sincerely hope that somehow, a rabbit can be pulled out of the hat and the aquaculture program in extension can be salvaged and with enough integrity, experience, knowledge and resources to continue to serve the industry.

Cindy

Hope to see you on Sept 11th!

Fate of Program Uncertain, Cont. from page 3

Jim has been working in the aquaculture industry for well over 30 years, first in research with Jeff Malison before joining up with Ron and Sarah to become one of the first Wisconsin Aquaculture Specialists. Jim's store of knowledge in coolwater fish, pond culture, low tech solutions and research have helped many farms in this state. Together, he, Sarah and Ron were able to cover all Wisconsin fish species; culture, spawning and rearing techniques; research; permitting and regulations and more. They have made hundreds of farm visits, had thousands of direct interactions with farmers and held 30+ workshops, all at little (workshops) or no cost to you. Asking for \$100,000 in the budget for 1 position that is so vital to this industry, is a drop in the bucket for the economic return in aquaculture business growth for this state.

A Note of Thanks

Friends and Colleagues of Wisconsin Aquaculture,

Saturday August 1st was my last day with UW-Extension as I retired; my departure is not new news, but the ending of the UW-Extension Aquaculture Program due to the Governor's Veto may be. I want to thank everyone who has contributed to what I call "Team Aquaculture" for Wisconsin over the years; through the many hurdles the industry has faced, making great strides in production and marketing, growing the industry and helping one another. Since its beginning in 2007, the UW-Extension Aquaculture Program has made over 400 farm visits, had 28,000 direct contacts, and conducted over 30 workshops, all to assist fish farmers and potential fish farmers in the state.

The Wisconsin Aquaculture Association (WAA) and the Wisconsin Aquaculture Industry Advisory Council (WAIAC) have been great assets for fish farmers and you need to continue to support these organizations while growing your business and the industry. Working together is the key to finding solutions.

My plans are to continue working for aquaculture by serving on the federal task force on invasive species and keeping in touch through Cindy. We will be at the Fall WAA Board and WAIAC meetings and WAA Annual Picnic on September 11th in Dodgeville at the Gollon's, so I hope to see you there.

It has been a pleasure and an honor to work with the industry.
Thanks, Ron

My new (old) email address is ron@javatrout.com

DNR Strategic Alignment, cont. from page 1

Perhaps more important than the reconfigurations - which agency officials are calling an "alignment" rather than a reorganization - is the implementation of direct line authority in its water programs. Specifically, management structures sitting between Madison policy makers and field workers will be eliminated to provide for more uniform application of agency policies and interpretations.

"What we're trying to do is better align our divisions, better align our programs so that we can effectively, efficiently, consistently deliver services to our customers and to our stakeholders," DNR assistant deputy secretary Michael Bruhn told The Times Tuesday. "It's really about a strategic alignment that allows us to do that cost effectively." The new formulation will be called the Environmental Management Division, he said.

Another change involves the DNR's fisheries bureau, which will be bundled with wildlife and parks to create a Fish, Wildlife & Parks Bureau. Those three functional areas had been separate. Finally, Bruhn said, a majority of the agency's watershed bureau - which deals with issues such as wetlands and chapter 30 permits - would be moved into a division called external services. "These are some of the one-offs, for lack of a better word," he said. "If someone comes in with a site-specific question for a specific wetlands fill, or they have a question on regulations regarding rip rap or they have a question about piers, that's going into an external services division. It's about trying to make sure that everyone understands that it's about providing the effective, efficient consistent good customer service and how we deliver those services to our customers and stakeholders."

Of particular importance for the Northwoods, Bruhn said a majority of shoreland zoning staff, or water management specialists, would be moved into external services. *Continued on page 5*

DNR Strategic Alignment, cont. from page 4

Direct line authority

"What that means is we will have direct line authority from the division through the bureau all the way down into the line staff and permit writers out in the field," Bruhn said. "Why that's important is, you've got bureau directors and policy staff here in Madison who are setting and implementing policies, and we need to make sure that they get implemented out in the field correctly." ... without that in-between management structure.

In a recent interview with The Times, DNR secretary Cathy Stepp said it has sometimes seemed like four or five different DNRs were operating around the state. Already, she said, the agency had moved to clean up and align the boots on the ground with Madison administrators.

For the customer, too, Bruhn said he hoped the changes would result in more positive user experiences. "It also means you are going to get timely responses, you are going to get friendly responses. It means you are going to be treated with dignity and respect. You are going to be treated the way you would want to be treated. Just because it is a government agency doesn't mean that you can't have service with a smile, so to speak. We don't tolerate bad service from a restaurant or a store, and that should be no different from a government agency. You should be served with respect and kindness and sometimes you get an answer you don't like, but we're going to explain why the answer is the way that it is."

Bruhn said the changes in direct line authority and alignment would take place Sept. 1, with core work analyses taking about nine months so the agency can involve management staff as well as its customer base and stakeholders.

2015 Aquaculture Day

Happy Aquaculture Day!

By Teyanna Loether, 68th Alice in Dairyland

To celebrate Aquaculture Day, I visited Silver Moon Springs trout farm in Elton. Their fish farm is a third generation family business, and was purchased by Tim Winkel's father in 1978. Interestingly, the farm was originally a mink ranch-- they raised fish on the side as a high protein source for their mink. Nowadays their focus is solely on aquaculture, and 95% of their business is stocking beautiful, healthy trout in private ponds. The most prevalent farm-raised fish in Wisconsin is trout due to their cold-water preferences, and Silver Moon Springs raises brook, brown, rainbow, and golden trout. Another aspect of aquaculture that the Winkels are involved in is fee fishing, where families and visitors can come right to their fish farm to catch any type of trout available. They'll even clean the fish you catch so they're ready to eat for supper that night!

See photos on pages 18 & 22

2015/16 CALENDAR OF EVENTS

Location: Gollon Bait & Fish Farm, 5117 State Rd 191, Dodgeville
Sept 11 WAA Board Meeting, 8:30-10:30am
Sept 11 WAIAC Meeting, 10:30am-12:30pm
Sept 11 WAA Member Picnic, 12:30- 3:30pm

Location: Crowne Plaza Milwaukee Airport, 6401 South 13th St.
Dec. 4 WAA Board Meeting, 8:30-10:30am
Dec 4 WAIAC Meeting, 10:30am-12:30pm

Location: Crowne Plaza Milwaukee Airport, 6401 South 13th St.
Mar 12-13, 2016 North Central Aquaculture Conference



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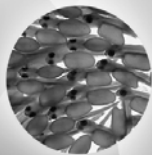
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Pentair Opens Aquaculture Center of Excellence

Pentair reimagining farming by fueling new industry utilizing its sustainable water technologies

MANCHESTER, United Kingdom - May 29, 2015 - Pentair plc (NYSE: PNR) - Mindful that fish farming has the potential to help meet an expanding population's need for protein in a world with increasing water constraints, Pentair announced the opening of its Pentair Aquatic Eco-Systems' World Aquaculture Technology Engineering & Research Center of Excellence in Apopka, Florida.

The center, which consists of 12,400 square feet of laboratories and fish culture systems, will be used for demonstration, research and teaching activities. Built to allow full connectivity to the Internet, customers and educational institutions will be able to monitor online the progress of fish culture trials, including water quality, feeding, feed conversion ratios, growth rates, energy consumption and harvesting activities.

"We call this farming reimagined," said Karl Frykman, president of Pentair's Water Quality Systems. "This center showcases our expertise and technologies in water reuse systems and solutions, including our energy efficient pumps and filtration systems."

The center, Frykman said, also highlights the world-class scientific expertise of Pentair's team of biologists, engineers, designers and technicians who specialize in sustaining aquatic life. "Through our work in aquaculture, at this center of excellence, we are innovating to help a new industry bring healthy food to developing countries, arid climates and space-challenged urban centers." *Continued*

The new center is "designed to allow development of innovative technology as well as showcase solutions for different environments around the world," said Bob Miller, Pentair VP Environmental Systems. "These systems can be put just about anywhere, as demonstrated by our work in the Middle East, and our partnership with Urban Organics in a former brewery in downtown St. Paul."

The Urban Organics farm currently produces fish and certified organic vegetables and herbs that are sold at area co-ops and grocery stores. The closed-loop system was designed to allow the fish and plant sides to operate independently, and for the flow of water and nutrients through the system to be tightly controlled—allowing Urban Organics to vary production according to market demand. Designed to be energy efficient with minimal waste, Pentair's sustainable aquaponics technology benefits operators like Urban Organics with cost savings on filtration and fertilizer, the elimination of soil borne disease in vegetable production, and the potential to meet organic standards.

The World Aquaculture Technology Engineering & Research Center of Excellence is located on the campus of Pentair Aquatic Eco-Systems, which houses offices, a customer contact center, and manufacturing and warehouse operations. For more information, visit www.pentairaes.com.

About Pentair

Pentair plc (www.pentair.com) delivers industry-leading products, services and solutions for its customers' diverse needs in water and other fluids, thermal management and equipment protection. With 2014 revenues of \$7 billion, Pentair employs more than 30,000 people worldwide.



Pentair Aquatic Eco-Systems offers solutions and expertise to improve growing conditions in any environment from recirculating aquaculture systems to improving water conditions in pens. Pentair AES can help you improve results in any part of the growing cycle.

Pentair AES employs experts in coldwater aquaculture—pioneers in the industry who earned their knowledge by running operations of their own—to provide the best possible solutions for cold-water aquaculture facilities, from hatcheries to grow-out and everything in between.

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Water Reuse without the Expense of a Biofilter nor Drum Filter

By Emma Wiermaa

Water has always been a valuable resource, but as for the aquaculture industry, it is considered "as good as gold". With advanced technology, water reuse systems, also known as Recirculating Aquaculture Systems (RAS) for land based aquaculture, *cont. pg 7*

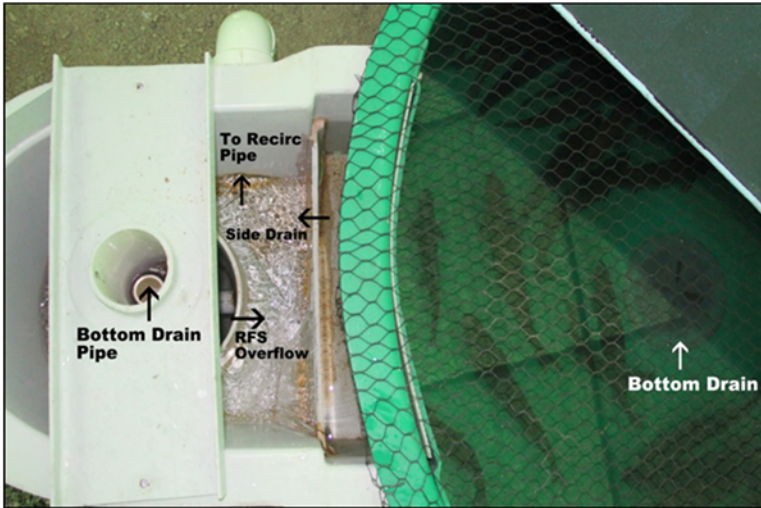


UWSP-NADF Partial Recirculation Building using Radial Flow Settlers and an aeration/degassing column.

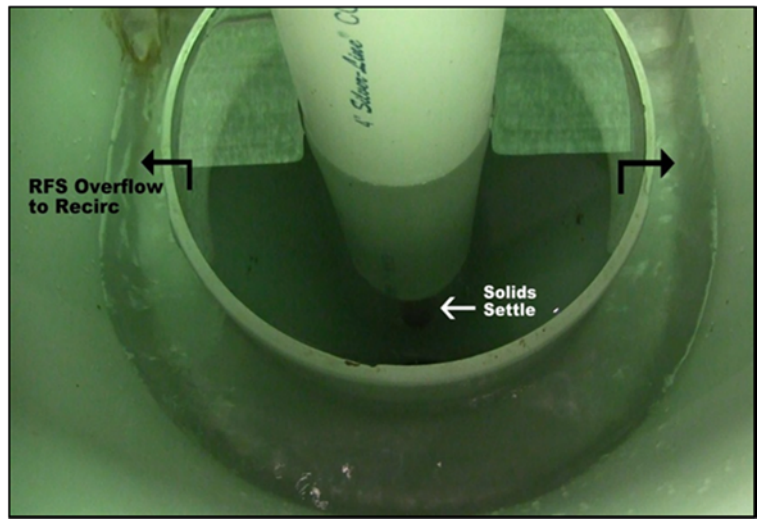
Water Reuse, continued from page 6

may be the future for this exponentially growing industry. With RAS we can limit effluent, increase production, and save water with the use of a drum filter and biofilter. Although these systems are highly efficient, their price tag is very difficult for farmers to consider.

The University of Wisconsin-Stevens Point Northern Aquaculture Demonstration Facility is currently testing and analyzing a system that will reuse 50-70% of water without the expense of a drum filter



Dual drain tank with an additional Radial Flow Settler which allows for both side drain and bottom drain water to be recirculated without a drum filter.



Radial Flow Settler allows for solids from the bottom drain to settle out in the cone shaped structure to be flushed periodically. The overflow is sent to be recirculated with the side drain water.

nor biofilter. This ability is due to dual drain tanks with a new additional design known as a Radial Flow Settler (RFS). The system consists of eight six foot dual drain tanks each with an attached RFS. These tanks are housing 3 year old lake trout, which are part of a study with the National Oceanic Atmospheric Administration (NOAA). The partial recirculation system is running at low densities. With higher densities, a drum filter may be needed for the system to operate effectively.

In a general RAS system, dual drain tanks are built to reuse all water leaving the tank through the side drain, which is the surface water and the cleanest water of the tank. *Cont. on page 8*



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For more information about YSI products, contact Darrin Honious at dhonious@ysi.com or (937) 767-7241 ext. 246.



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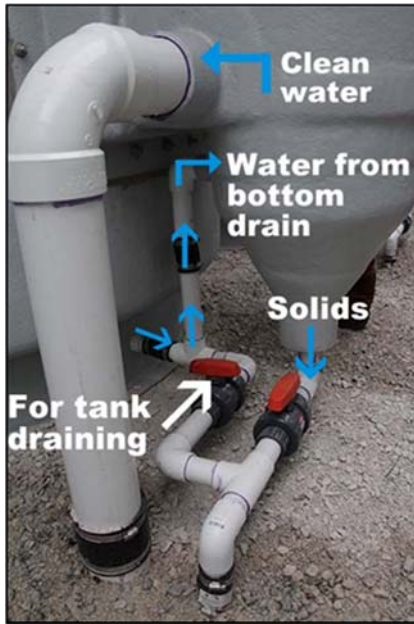


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YSI Incorporated is a brand of Xylem, whose 12,900 employees are addressing the most complex issues in the global market.
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Let's Solve Water

Water Reuse, continued from pg. 7



>Plumbing of the Radial Flow Settler (RFS). The bottom drain is sent to a cone shaped structure in the RFS where solids settle out and can be flushed from the system periodically by opening the valve. When the solids valve is closed, the overflow from the RFS cone will mix with the side drain water and will be recirculated as the cleaner water from the tank.

This accounts for around 90% of the water leaving the tank. The bottom drain, accounting for 10% of the water leaving the system,

contains much of the fecal material and leftover feed. Usually this water leaves the system as effluent or is sent to a drum filter before recirculating. With the addition of a Radial Flow Settler, this bottom drain water can be reused without a drum filter. With this new design, the bottom drain water is sent to the RFS *continued*

where the solids settle out at the bottom of the cone structure and can be flushed out of the system periodically. The overflow from the RFS is mixed with the side drain water and gravity fed to the sump be recirculated.

After the water reaches the sump it is pumped up to a degassing and aeration column. This column, located at the back of the building, shoots water through shower head structures and into a degassing/aeration box which is a complex of plastic material. An opening through the side of the FarmTek building allows for a fan to pull in fresh air to increase aeration to the flowing water. The height of the column allows the recirculating water to be gravity fed back into each tank. Each tank is supplied with a fresh water line as well as the recirculation line distributed to all tanks.

The partial recirculation system practices sustainable aquaculture by reusing at least 50% of water without the expense of a biofilter or drum filter and only pumping water once. This system is still currently being tested and analyzed at UWSP-NADF. This system may only be acceptable for lower densities without the use of a drum filter. Stay tuned regarding further analysis of this system.

- **Manufacturers:**

Tanks: Hydrocomposites Inc. Contact: Chris Mills at chris@hydrocomposites.com

CO2 Stripper/aeration column: L.S. Enterprises Contact: Matt Smith at mattsmith@biofilters.com

Look for more details and information including a slide show regarding this system on our webpage: aquaculture.uwsp.edu >Current Projects> Partial Recirculating Aquaculture System



Nelson & Pade

New Opportunities to Learn About Aquaponics!

Central Wisconsin - Aquaponics combines fish and vegetable production, producing both in one integrated, sustainable system, 365 days per year! Aquaponics fills the demand for local, premium quality, fresh food. People around the world are seeking information on aquaponics so they can raise food for a family, feed a community or be successful in a profitable aquaponic farming venture.

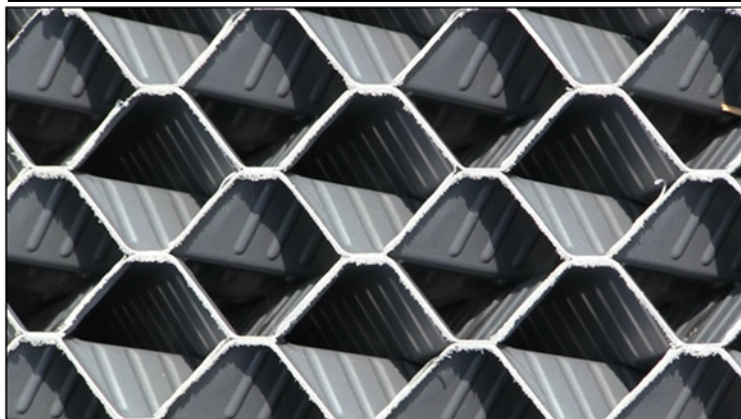
Nelson and Pade, Inc.®, The Most Trusted Name in Aquaponics®, has been supplying complete systems and teaching classes on aquaponics for nearly 20 years. To date, people from 78 countries and all 50 states have attended Nelson and Pade Inc.'s aquaponics classes. To accommodate the increasing demand for education in aquaponic food production, Nelson and Pade, Inc.® is expanding their class offerings to meet the needs of everyone interested in learning about this fascinating method of food production.

New classes cater to investors and entrepreneurs looking to start aquaponic businesses, individuals who want to home-build an aquaponic system, families who want to grow fresh food, curiosity seekers and foodies! Each course is specialized to meet the needs of the individuals in attendance.

Classes take place at Nelson and Pade, Inc.'s state-of-the-art controlled environment, aquaponic greenhouse facilities in Montello, WI. All classes include lectures, demonstrations and hands-on learning in fully functional aquaponic greenhouses.

New and current class offering include: *Continued on page 9*

UWSP-NADF construction of an aeration and degassing column (top) for the partial recirculation system. Water enters the column and percolates through a matrix of plastic material (bottom).



New Opportunities, continued from page 8

Introduction to Aquaponics Seminar with an Aquaponics Greenhouse Tour (3 hours)

4 classes: Tues, Sept 8/Nov 10, 5:30pm • Tues, Oct 13/Dec 8, 1pm
This is an excellent introduction to aquaponic methods, advantages and applications that includes a tour of our commercial and hobby aquaponic greenhouses. It is a great opportunity to learn about this technology in a real-world setting.

Business Opportunities in Aquaponics: An Introduction to the Technology, Economics & Startup (8 hrs.)

Fri, Oct 16, 9am • Sat, Nov 21, 9am

Entrepreneurs, investors, anyone considering a franchise and anyone looking for a proven business model should attend this class to understand and take advantage of the business and investment opportunities in aquaponic food production.

Foodie's Aquaponics Adventure and Cooking Demo (4.5 hours)

Fri, Sept 25, 3pm • Fri, Oct 30, 3pm

The Foodies Aquaponics Adventure and Cooking Demo is for anyone who appreciates great, local food; those looking for solutions to change the food system and all aquaponics enthusiasts. A greenhouse tour is followed by cooking demonstrations and tastings! A great time will be had by all.

Grow Your Own Fresh Fish and Veggies: Aquaponics Home Food Production (8 hours)

Fri, Oct 2, 9am

If you are interested in growing fish and veggies for your family and friends and want to understand how aquaponics can help you achieve it, this class is designed for you. The focus is on proven system designs, with tips on what you can grow, what methods work

and how you can move forward to achieve your goals in growing your own fresh food, all without pesticides, herbicides or chemical fertilizers.

Home Builder's Hands-on Training for Success in Aquaponics (8 hours)

Sat, Oct. 10, 9am

• Fri, Dec 11, 9am

If you are thinking of home building an aquaponic system to grow food for you family, this is the class for you! In this class, we teach science-based principles and proven methods for home building an aquaponic system. We teach you how to source the right materials and implement proper designs so you can build a system to grow fresh, safe fish and vegetables at home. It is a combination of classroom and hands-on building and learning.



Aquaponics Master Class™, 3-days

Sept 17-19, 2015 • Oct 22-24, 2015 • Dec 3-5, 2015

The Aquaponics Master Class™ is a 3-day *continued on page 11*

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SKRETTING 

New Opportunities, continued from page 9



comprehensive course intended for anyone seriously considering getting into aquaponic food production or those already doing aquaponics who want to learn more about the technology.

The topics most important to being successful in aquaponics are presented in lectures, demonstrations and hands-on learning. Nelson and Pade, Inc.® helps people get started and become successful in aquaponic food production by providing comprehensive training, proven, science-based Clear Flow Aquaponic Systems® and long-term grower support in the Nelson and Pade Grower Program. Nelson and Pade, Inc.'s patented system designs and University accredited training programs demonstrate leadership and credibility in a rapidly growing industry. Join us for fun and informative classes, taught by professionals.

Continued

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RULES & REGULATIONS

COOL compromise is the only path forward

Published on July 29th, 2015

WASHINGTON — National Farmers Union (NFU) President Roger Johnson explains in a recent [Agri-Pulse guest column](#) that, fortunately for all parties involved in the Country-of-Origin Labeling (COOL) dispute at the World Trade Organization (WTO), Sens. John Hoeven, R-North Dakota, Debbie Stabenow, D-Michigan, and a bipartisan group of cosponsors have introduced a COOL compromise bill that both meets our international trade obligations and maintains the integrity of the country-of-origin label.

“The Hoeven-Stabenow compromise is a win-win for everyone involved with the WTO dispute,” says Johnson. “It mandates the development of a clear, strong and honest ‘made in the USA’ label that we know consumers want, and it defangs the WTO ruling by making the law voluntary, not mandatory. Consumers win, producers win, our trading partners win and the WTO ruling becomes a moot point.”

Rest of story <http://www.agri-pulse.com/Opinion-The-Hoeven-Stabenow-COOL-compromise-07272015.asp>

From Wisconsin Wetlands Association Rule Change Reduces Barriers to Restoring Wetlands on Working Farms

Madison, July 1. A small change to Wisconsin's property tax assessment law (Tax 18) has created a big opportunity for wetland restoration and other agricultural conservation practices. The changes recognize the importance of wetlands in agricultural landscapes and open the door for broader discussions about the benefits of restoring and actively managing wetlands on working farms. For many years, all lands restored to wetlands in agricultural landscapes were reclassified from agricultural land to undeveloped land for property tax assessment purposes – even lands restored through state and federal soil and water conservation programs. Lands restored to non-wetland practices through these programs retained agricultural tax treatment. Because agricultural land is taxed at a reduced rate, new wetland landowners often saw large increases in their property tax bills. An update to Tax 18 takes effect on July 1st and addresses this inconsistency. The text of the new rule can be found through: <http://tinyurl.com/Tax-18-05-new>.

It's raining WOTUS lawsuits

Posted: Monday, July 13, 2015 12:00 am

By Seymour Klierly

http://www.hpj.com/opinion/it-s-raining-wotus-lawsuits/article_3cbe8f5b-fde0-5389-b94c-7da1826825f8.html

I've seen a quote before that reads, "...once in your life you need a doctor, a lawyer, a policeman and a preacher, but every day, three times a day, you need a farmer." This comes from *cont on page 12*

Branda Schoepp, a Canadian farm girl and inspirational speaker, whose grandfather used to tell her this.

Well, guess what—EPA is in need of a lot of lawyers right about now, mostly because of farmers. Recently, a coalition of a dozen industry groups—from agriculture to manufacturers to mining—filed a complaint against the U.S. Environmental Protection Agency and the Army Corps of Engineers over the Waters of the U.S. rule.

The groups, which filed the complaint in a Texas federal district court, say the finalized WOTUS rule goes further than the purposes of the Clean Water Act. According to the coalition, the WOTUS rule is a broad overreach by the federal government on land, which is unconstitutional.

The groups include the American Farm Bureau Federation, American Petroleum Institute, American Road and Transportation Builders, Leading Builders of America, National Alliance of Forest Owners, National Association of Home Builders, National Association of Manufacturers, National Cattlemen's Beef Association, National Corn Growers Association, National Mining Association, National Pork Producers Council and Public Lands Council.

Now, one could argue this is mostly just a bunch of farmers complaining about EPA, which would be no surprise. But, just days earlier, 27 states filed comparable suits against the EPA. That's over half the country.

Editor's note: Seymour Klierly writes Washington Whispers for the Journal from inside the Beltway

Continued

July 1, 2015

Wisconsin Files Lawsuit Asking Court to Overturn Burdensome 'Waters of the United States' Rule

MADISON — Attorney General Brad Schimel today announced Wisconsin has joined eight other state Attorneys General in a lawsuit asking a federal court to strike down a new rule from the Environmental Protection Agency and the U.S. Army Corps of Engineers that unlawfully expands the federal government's regulatory reach over local streams, lands and farms. Eleven other states have filed a parallel lawsuit. This rule could have dire consequences for homeowners, farmers and other entities by forcing them to navigate a complex federal bureaucracy and obtain costly permits in order to perform everyday tasks like digging ditches, building fences or spraying fertilizers. Failure to comply with this new regulatory scheme could result in substantial fines.

"Wisconsin already has strong clean water regulations and these proposed duplicative regulations will serve only to harm farmers and landowners by substantially increasing costs and delaying permits," Schimel said. A copy of the complaint is available at <http://www.doj.state.wi.us/sites/default/files/2015-news/complaint-20150701.pdf>

**Mark your calendars for Sept 11!
WAA Members Picnic & farm tour**

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Funding Opportunities

USDA SBIR Announces Phase I Funding Opportunity

The U.S. Department of Agriculture, Small Business Innovation Research Program (USDA SBIR) is now accepting proposals for Phase I project funding. USDA SBIR has awarded over 2000 research and development projects since 1983, allowing hundreds of small businesses to explore their technological potential, and providing an incentive to profit from the commercialization of innovative ideas.

Only companies that qualify as a small business (0-500 employees) may apply. Funds may be awarded that range from \$70,000 - \$100,000 for a Phase I project. Proposed Phase I projects should prove the scientific or technical feasibility of the approach or concept. Projects dealing with aquaculture are among the 10 research topic areas (see 8.7 Aquaculture). However, please read the other topic areas where aquaculture small business contributions may be appropriate. USDA SBIR's flexible research areas ensure innovative projects consistent with USDA's vision of a healthy and productive nation in harmony with the land, air, and water.

For the complete funding announcement, visit <http://nifa.usda.gov/funding-opportunity/small-business-innovation-research-program-phase-i>. Proposals must be submitted electronically via Grants.gov by 5:00 pm Eastern Time on October 8, 2015.

For general information, send questions via email to sbir@usda.gov. For questions concerning the 8.7 Aquaculture topic area, please contact Dr. Gene Kim at Gene.W.Kim@nifa.usda.gov or telephone 202-401-1108.

FSA Guaranteed Loan Program

FSA guaranteed loans allow lenders to provide agricultural credit to farmers who do not meet the lender's normal underwriting criteria. Farmers apply for a guaranteed loan through a lender, and the lender arranges for the guarantee. FSA can guarantee up to 95 percent of the loss of principal and interest on a loan. Guaranteed loans can be used for both farm ownership and operating purposes.

Guaranteed farm ownership loans can be used to purchase farmland, construct or repair buildings, develop farmland to promote soil and water conservation or to refinance debt.

Guaranteed operating loans can be used to purchase livestock, farm equipment, feed, seed, fuel, farm chemicals, insurance and other operating expenses.

FSA can guarantee farm ownership and operating loans up to \$1,392,000. Repayment terms vary depending on the type of loan, collateral and the producer's ability to repay the loan. Operating loans are normally repaid within seven years and farm ownership loans are not to exceed 40 years.

Please contact your lender or local FSA farm loan office for more information on guaranteed loans.

Buy Local Buy Wisconsin Grant applications due September 14, 2015.

There are \$200,000 of grant funds available. The maximum grant award is \$50,000 per project. Grant applicants must *continued*

Funding Opportunities, continued

provide cash or in-kind match equivalent to or greater than 50% of the total project cost.

Pre-proposals must be received at DATCP by 4:00 pm on September 14th 2015. Pre-proposals include a cover page, budget template and three-page project description.

After an internal review of pre-proposals, qualified projects will be invited to complete a full proposal application and participate in an interview. The announcement of selected projects will be made in early 2016.

The complete grant manual, cover sheet and budget outline is available online at http://datcp.wi.gov/Business/Buy_Local_Buy_Wisconsin/BLBW_Grants.

For more information, contact DATCP's Buy Local, Buy Wisconsin Program Manager, Teresa Engel, at 608-224-5101 or teresa.engel@wi.gov.

New NYFC report finds student loan debt is exacerbating farmer shortage

Posted by [Chelsey Simpson](#) on Wednesday, June 24, 2015
<http://www.youngfarmers.org/new-nyfc-report-finds-student-loan-debt-is-exacerbating-farmer-shortage/>

Today NYFC released a new report, [Farming Is Public Service: A Case for Adding Farmers to the Public Service Loan Forgiveness Program](#), which shows that student loan debt is one of the key barriers preventing more would-be farmers and ranchers from entering agriculture.

The report contains data from **a new survey of more than 700 young farmers** as well as data compiled from the USDA Census of Agriculture. Highlights include:

- Only 6% of all U.S. farmers are under the age of 35. Between 2007 and 2012 America gained only 1,220 principal farm operators under 35. During the same period, the total number of principal farm operators dropped by more than 95,000.
- 30% of survey respondents said their student loans are delaying or preventing them from farming.
- 28% of survey respondents say student loan pressure has prevented them from growing their business, and 20% of respondents report being unable to obtain credit because of their student loans.

With thousands of American farmers nearing retirement (the average age of farmers is now 58), **the U.S. needs at least 100,000 new farmers over the next two decades**. This issue reaches beyond the farm and impacts rural economies because farmers are often the primary revenue generators and employers in rural areas.

On June 1, legislation was introduced in Congress that would add farmers to the Public Service Loan Forgiveness Program (PSLF), placing the profession of farming alongside careers such as nursing, teaching, and law enforcement that already *cont. on page 14*

Student Loan Debt, continued from page 13

qualify for the program. Through PSLF, professionals who make 10 years of income-driven student loan payments while serving in a qualifying public service career have the balance of their loans forgiven.

The bipartisan **Young Farmer Success Act (H.R. 2590)** was introduced by Rep. Chris Gibson (R-NY) and Rep. Courtney (D-CT). Co-sponsors include Rep. Pingree (D-ME), Rep. Emmer (R-MN) and Rep. Lofgren (D-CA). The legislation has broad support from nearly 100 farming organizations, including National Farmers

NSAC's Blog

Millions Available to Help Connect Retiring Landowners with New Farmers

June 24, 2015

Access to farmland remains one of the most difficult challenges that new farmers face when looking to start farming. Fortunately, since 2008, there has been a federal incentive program that encourages retiring landowners to sell or lease long term to new and under-served farmers.

The [Transition Incentives Program \(TIP\)](#) is an option for farmers and landowners enrolled in the Conservation Reserve Program (CRP) who both have land expiring from CRP and who intend to retire from farming that particular land.

Continued

Millions Available, continued

New Farm Bill Funding

The 2014 Farm Bill renewed funding for TIP after program funding ran out in early 2013. Since passage of the farm bill last February, USDA has used roughly **26 percent** of the total \$33 million in new funding allocated for the program.

This works out to **\$8.5 million** that has been paid to retiring landowners across **18 states**, allowing **503** new, minority, and veteran farmers access to over **84,000** acres of farm and ranchland.

For more information on how TIP works and who is eligible to participate, check out our [Grassroots Guide](#) link here:

<http://sustainableagriculture.net/blog/tip-fy15-data/>

(10) Incubators and Funding Resources for Farms and Food

July 13, 2015 | 02:00 PM

From [foodtank.com](#), by Emily Nink

Farmers are the backbone of resilient local and regional food systems, yet many are aging or retiring. [The FarmLASTS Project](#) at the University of Vermont estimates that **70 percent** of farmland in the United States will change hands over the next two decades. The age of the average U.S. farmer is **58.3 years old**, and rural populations are declining as a percentage of the national population, according to [U.S. Census Data](#).

To create a sustainable food system, we need to cultivate young farmers. Supporting beginning farmers needs to be a collaborative effort—one that connects young people with both financial and technical resources and provides the knowledge necessary to develop a successful business. New farmers also need sustainable funding and mutual partnerships with investors, which are increasingly found outside of traditional investment models.

“When starting a business, it is very important to have accurate information that feeds into your business plan,” [says beginning farmer Dan Berube](#). “Expectations are everything in life. Many beginning farmers are coming from families that haven't farmed for a few generations now, so it is hard for them to know what they are getting themselves into.”

[Researchers from Tufts University](#) note that new farmers are more likely to face financial hardships than veteran farmers. Beginning farmers lack access to land, capital, and established marketplaces for their products. Moreover, new farmers often lack the technical expertise and business knowledge needed to run a successful farm. Fortunately, food incubators and accelerator programs can offer business support from industry experts, technical assistance, introductions to markets, mentoring, and training, thereby helping new and existing farmers to overcome barriers to entering farming. These initiatives help beginning farmers to launch new businesses, expand existing operations, and increase their incomes. Food Tank is highlighting 30 resources available for producers who are working to create food sovereignty and sustainable farm business models, ranging from food and farm incubators to sources of grant money and microloans:

[ACDI/VOCA](#)—a private, nonprofit organization—envisions a world in which empowered people can succeed in the global economy. To achieve this vision, ACDI/VOCA promotes “economic opportunities for cooperatives, enterprises, and *continued on page 17*”



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Bob Robinson - *Director of Sales & Marketing - Fisheries Biologist*

- Started at Kasco in 1999
- Over 30 years of industry experience, with expertise in water quality, aeration & aquaculture applications
- Worked for Indiana Dept. of Natural Resources, Bureau of Land Management in Colorado, State of Wisconsin, Aquatic Eco-Systems & Purina-Rangen Fish Feeds
- Holds Bachelor of Science degrees in water resource management - fisheries & biology from UW-Stevens Point



Joe Holz - *Outside & International Sales*

- Started at Kasco in 2002 as inside sales & customer service support
- Helps customers in a wide area of uses & unique applications including aeration needs in backyard ponds, intensive aquaculture, golf & irrigation applications, water treatment & processing, mining, & lake front property management
- Worked at Rushing Waters Fisheries in Palmyra, Wisconsin in fish rearing, fish health, culling, sorting & processing
- Holds Bachelor of Science degrees in environmental science & geography from Carroll University



Andy Gillis - *Outside Sales*

- Started at Kasco in 2005
- Currently the product manager for de-icers & circulators
- Previous owner of an aquatic supply business where he was the aquaculture consultant & helped customers with aeration projects in ponds, lakes & open water
- Attended University of Maryland & Johns Hopkins University



Ken Rust - *Outside Sales*

- Started at Kasco in 2009, but previously sold Kasco products for more than 20 years working in the industry
- Currently the product manager for Kasco's Robust-Aire diffused aeration system
- Helps customers design proper aeration layouts for ponds & lakes to improve & protect the health of their ponds
- Holds a Master of Science degree in Aquaculture & Fisheries from LSU



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Incubators and Resources, cont. from page 14

communities through the innovative application of sound business practice.” Programs specific to agriculture include [Farmer-to-Farmer](#), the [Cooperative Development Program II](#) (CDPII), and implementation of the U.S. Agency for International Development’s (USAID) [Feed the Future](#).

[AgroEcology Fund](#) is a “collaboration of donors working to coordinate and sustain agricultural systems that build on the existing skills and practices of local farming communities.” The Fund awards grant money to eligible projects; in 2012, the AgroEcology Fund awarded US\$1 million to six partners for a two-year grant period. Supported by an advisory board of global experts, the Fund is currently working on its second round of grantmaking.

[FamilyFarmed](#) works to increase the production, marketing, and distribution of food that is produced locally and justly. To achieve this goal, FamilyFarmed offers trainings in farming, wholesale success, and food safety; provides access to food hubs; helps expand markets for farmers and food artisans; brings together [financing and innovation](#) partners at its Good Food Conferences; and offers a [Business Accelerator program](#) that provides selected fellows with mentoring, support, and access to capital.

[Farm Aid](#) helps build a family-farm-focused agricultural system through a variety of resources. The online [Farmer Resource Network](#) allows farmers to “access new markets, transition to more sustainable and profitable farming practices, and survive natural disasters.” The [Grant for Family Farm Agriculture](#) program provides family farm organizations from across the country with grants ranging from US\$500–US\$20,000 annually.

[Food and Farm Communications Fund](#) (FFCF) facilitates the strategic communication needed to create robust and resilient regional food systems. FFCF offers grants to a variety of programs, which the organization assesses for viability in market strategy and communications. Funding ranges from US\$10,000–US\$100,000.

[Food+Tech Connect](#) is an online platform for good food innovators that uses technology and data to improve the food system. Through resources like its weekly newsletters, Food+Tech Connect helps to launch, grow, and transform companies committed to revolutionizing the food system. Additionally, Food+Tech Meetups and Hackathons discuss and undertake “some of the food industry’s greatest challenges.”

[Global Greengrants Fund](#) has provided over USD\$45 million in grants to people, foundations, and businesses supporting community-based projects that aim to make the world safer, healthier, and more just. These grants have addressed pressing issues--including biodiversity, climate change, energy and mining, food and agriculture, fresh water, sustainable livelihoods, marine and coastal

[National Sustainable Agriculture Coalition Beginning Farmer and Rancher Development Program](#) (BFRDP) is the only federally funded program dedicated exclusively to training the next generation of farmers and ranchers. BFRDP awards grants to academic institutions, state extension services, producer groups, and community organizations to support and train new farmers and ranchers across the United States.

[National Young Farmers Coalition](#) works to secure the success of young farmers by supporting practices and policies that enable new farmers to create thriving businesses. The *continued on pg 19*



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Teyanna Loether, 68th Alice in Dairyland and Senator Tiffany



AQUACULTURE DAY 2015 turned out to be very hot and humid, impacting visitor turnout at our 12 participating farms. However, the temperatures weren't quite a bad up north and Silver Moon Springs had their best turnout. Teyanna, 68th Alice in Dairyland was an additional draw and spent several hours visiting with guests. Channel 15 Madison visited Century Trout Farm, Mike and Kathy Foster (Wilderness Springs) went to the WSAW studio for an interview, while Fox News came out to Rushing Waters the following week. Teyanna did an in studio interview at Channel 15 on aquaculture on August 2. You can see all of these on our Facebook page.

Several farms had visits by their legislators: Senator Tiffany visited both Silver Moon and Vozka's with Representative Czaja also visited Vozka's, and Senator Bewley stopping in at Timberline.

The WAA website had over 4100 hits during the 3 weeks prior to Aquaculture Day—triple our normal rate!

A budding fisherwoman?



2 young fishermen testing their skills at identifying fish



Incubators and Resources, continued form page 17

Coalition offers a variety of resources that help farmers overcome barriers and create strong, prosperous farming operations, including connecting farmers with [land and jobs](#), [training opportunities](#), a guide to finding [credit and capital](#), and information on the [organic certification](#).

[RSF Social Finance Seed Fund](#) provides grantees with small gifts, ranging from US\$500–US\$5,000, to provide financial support for initiatives that address specific focus areas, one being food and agriculture. RSF seeks grant proposals that are credible, feasible, and sustainable; that foster collaborative work; that provide intended results and outcomes; and that have beneficial economic, ecological, and social impacts.

Know of any programs in your area that are working with beginning farmers to build sustainable business models? Share your ideas with me at danielle@foodtank.com!

Ed Note: The original list included 30 resources, but ones focusing on specific states or other countries were omitted.

NAA Exhibits at CAFÉ Conference & Conducts Survey

The Center for Advancement of Foodservice Education (CAFÉ) Leadership Conference provided the opportunity for the National Aquaculture Association (NAA) staff to meet face to face with culinary faculty from across the United States. To make this into a more effective learning experience, the NAA conducted a brief survey designed to identify knowledge gaps and provide science-based answers to common questions about U.S. aquaculture. A similar survey will be conducted during the American Culinary Federation Convention in August. Culinary school faculty is a particularly important target audience because these instructors reach hundreds of students each year and those students will become the chefs, restaurateurs, and foodservice professionals who will buy farm-raised seafood in the future.

The survey provided some insights into the current state of knowledge. Forty percent of the respondents were aware of the USDA recommendation for two seafood meals per week. However, 12% felt that there was no specific recommendation.

When asked what percent of the seafood consumed in the United States is farmed or fished domestically, 53% of the sample felt 60 or 70%. No one guessed 10% which is the correct answer. This is an important concept because it emphasizes the pressing need to develop U.S. aquaculture. On the question of added hormones, antibiotics, and genetic engineering to promote growth, 48% believed that these practices are used in U.S. food fish aquaculture.

The final question dealt with the importance of consuming seafood on a regular basis during pregnancy to improve the overall health of the developing fetus. This, along with coronary heart health benefits, was a critical issue in the development of the 2010 Dietary Guidelines for Americans. Twenty-four percent of the respondents felt that the statement was not true. This is an especially important consideration since college aged females are one of the primary target audiences for this information. There still seems *continued*

NAA Exhibits at CAFÉ, continued

to be a great deal of confusion about the accurate interpretation of the mercury advisory.

Although it was positive to see that so many culinary instructors felt that aquaculture was sustainable, there is still much work that needs to be done on educating culinary professionals about the health attributes of U.S. farm-raised seafood. The NAA provided copies of publications that address these issues, an answer sheet to the survey questions, and NAA contact information as a future reference for instructors and culinary professionals.

Global Aquaculture Advocate, July/August 2015

Research Updates

Aquaculture Feed Composition Helps Define Potential For Water Pollution

Sirirat Chatvijitkul, School of Fisheries Aquaculture and Aquatic Sciences, Auburn University and Claude F. Boyde, Ph.D., School of Fisheries Aquaculture and Aquatic Sciences, Auburn University
The most effective way of reducing the water pollution potential of feed is by using high-quality feed applied in a manner that assures culture animals fully consume it.

Summary:

A study found that feed for salmon and trout had higher organic carbon concentrations than did catfish, shrimp and tilapia feeds. Nitrogen and phosphorus concentrations were similar among salmon, trout and shrimp feeds, and higher than those in catfish and tilapia feeds. Whole body concentrations of organic carbon were greater in salmon and trout than in the other species. Salmon and shrimp had the highest whole body nitrogen concentrations. Phosphorus concentrations were greater in catfish and tilapia than in the other species.

Breaking The 20% Soy Barrier In Fish Feed Improved Trout Line Boasts Good Growth, No Distal Enteritis

Ronald W. Hardy Ph.D., Aquaculture Research Institute, University of Idaho; Ken Overturf, Ph.D., University of Idaho; Andreas Brezas, Agriculture Research Institute, University of Idaho

Summary:

Reduced performance in fish fed high-soy feeds has been blamed on antinutrients, low methionine content and palatability issues. Pre-treatment to inactivate antinutritional compounds and supplementation with amino acids improves soy-based feed performance, but not to control levels. After 14 years of selective breeding, a line of rainbow trout grows rapidly on a high-soy diet and also does not develop distal enteritis. Combined with advanced bioinformatics, the trout phenotype can be a tool to further explore mechanisms of fish growth and health.

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Everything you always wanted to know about fish farming but were afraid to ask

By [Amelia Urry](#) on 31 Jul 2015

http://grist.org/food/everything-you-always-wanted-to-know-about-fish-farming-but-were-afraid-to-ask/?utm_campaign=daily&utm_medium=email&utm_source=newsletter

Aquaculture is booming: As of 2012, [we produce more](#) farmed fish than beef worldwide, some 66 million tons. And while fish farming has a bad reputation, the mangrove-plowing, antibiotic-dosing, overcrowded and under-regulated shrimp- and salmon-farms of the 1980s are — like Members Only jackets and crimped hair — largely relics of those times, with a few heinous exceptions. The New Aquaculture (TM) is sleek and clean, with always-advancing science and technology on hand to help producers keep an eye on sustainability, as well as the bottom line.

And it's [working](#): According to [a report](#) from U.N.'s Food and Agriculture Organization, aquaculture will grow by 50 percent over the next 15 years, while fisheries will probably only grow by a couple billion tons. That means, by 2030, we will farm as many fish as we catch — to the tune of 90 million tons.

Can farmed fish be good?

Graham Young, director of the publicly funded [Western Regional Aquaculture Center](#) and a professor of fishery sciences at the University of Washington, thinks aquaculture just has a PR problem. Aquaculture's potential for good really is greater than its record for harm. Even more strikingly, every expert I have spoken to agrees, however begrudgingly, that it will be a necessary part of our future food scene. So let's get it right. But first we have to get over a couple of hurdles: Yes, well-managed wild-capture fisheries are about as low-impact as food gets, as vocal proponents like [Paul Greenberg](#) and [Andy Sharpless](#) have argued. But no matter how green our fisheries are, there will always be a limit to how much we can catch. If we take any more than that, we'll outpace the environment's ability to keep churning out fish.

Can farmed fish be green?

Fish farming, unlike fishing, is a food production system. Fish farming, done well, could potentially provide a reliable amount of protein for a fraction of the energy costs and labor that go into hunting them down at sea. There are also plenty of finfish that make fairly successful vegetarians, which means their impact is lighter than most. Tilapia and catfish, for example, are especially good at turning low-cost plant-based feed into high-quality protein.

Can farmed fish be cool?

Farmed salmon, once the super villain spread at your bagel brunch, has been raking in the "Most Improved" awards [left](#) and [right](#). The first farmed salmon was even [certified sustainable](#) *continued*

Everything you wanted to know, continued

[last year](#), according to a set of standards established by the Aquaculture Stewardship Council. What changed? Most fish, especially those top-of-the-food-chain carnivores like salmon and trout, need certain omega-3 compounds in their food in order to grow. So [fish meal](#) and fish oil have long been the fuel behind the aquaculture boom. But the amount of fish meal that we use has stayed relatively constant since 2000, even as the percentage that goes toward aquaculture continues to grow. That means we're feeding less fish meal to livestock like pigs and chickens. Yes, fish meal and fish oil are expensive — they're limited resources and laborious to produce, but that means that producers will have to figure out how to use them as efficiently as possible. Even the farmed species that require on the omega-3s in fish oil can be fed a diet that largely consists of other proteins, like soy- or algae-based feeds, with just enough oil to make everything run smoothly. And researchers are constantly looking to dig up new alternatives to both fish meal and oil — things that might be even lighter on the land, like [insects](#), or [genetically modified flax](#), or [yeast-grown omega-3 oils](#) that can be churned out in fermenting vats with almost no waste at all.

Can farmed fish be clean?

And while we're talking waste: Fish farms have a bad reputation for flooding the waters around their pens with the stuff — professionals call it "effluent," but we'll go pre-adolescent and just say "poo." But these problems are mostly a matter of location, location, location, Young says. Fish farms that are located in areas with good water circulation and robust local ecosystems may have barely any effect on local wildlife at all. "In the Norwegian salmon industry, which is probably the first or second producer of Atlantic salmon, if you lined the cages up side by side, you would occupy the main runway on the Stockholm airport," Young says. That's not a lot of space — about 60 acres, if you [trust my math](#) — to grow a lot of food — [about a million tons of salmon](#). *Continued on pg 21*

And then there are on-land fish farms, which exist in closed sys-



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Everything you wanted to know cont. from page 20

tems that draw water in and flush waste out. In theory, these systems could be tuned to recirculate almost all of their water. In practice, that kind of energy-intensive operation is rarely economically viable, at least not yet. “Right now, the technology is still promising,” Young says, but of the examples of scaled-up recirculating aquaculture projects, he says, “I can’t think of many who survived more than a few years.”

Can farmed fish be better?

Perhaps the most audacious and simplest advance in aquaculture has been a matter of DNA. And no, we’re not talking genetically engineered fish, we’re talking plain, old genetic selection — the oldest agricultural technology at our disposal. Young says, genetic selection is necessary to both the economic and environmental sustainability of aquaculture’s future, too. In fact, it’s already getting us there. New lineages of salmon and trout can survive and thrive on ever decreasing amounts of fish oil, while still packing on the tasty, tasty pounds — and for this we can thank good ol’ unnatural selection.

Over the next 30 years, we’ve essentially invited an extra 2 to 3 billion people to the table for dinner — they didn’t ask to be there, but here they come ... so we better stock up on apps and entrées. If we’re going to sate those incoming masses, we are going to have to do the most complex diner-party menu planning ever.

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From USDA

Lessons from the Field: A New Series for Food Hub Development

Posted by [Lilian Salerno, Administrator, Rural Business Service, USDA](#), on July 15, 2015 at 10:00 AM - See more at: <http://blogs.usda.gov/2015/07/15/lessons-from-the-field-a-new-series-for-food-hub-development/#sthash.EVwb18oJ.dpuf>
Since 2009, USDA has invested in [29,100 local food opportunities](#), including food hubs, small scale processing and farmers markets across all 50 states and the US territories. These investments include over 12,000 loans and micro-loans to small-scale producers. However, as with any investment, the success of a business depends not just on an infusion of capital, but also on good planning. This is why USDA Rural Development is introducing a new technical report series called *Running a Food Hub*. The first report in the series, [Running a Food Hub: Lessons Learned from the field](#), details best business practices for starting or expanding a food hub, including operational profiles of several existing hubs. USDA Rural Development is leading the way to support the development of food hubs and other such enterprises to drive economic opportunity in rural counties across America. The strategy includes a call for expanded “regional agricultural infrastructure” to increase the amount of locally grown food reaching local markets. Secretary Vilsack has identified local and regional food systems as one of his [Four Pillars](#) of agriculture and rural economic development, along with production agriculture, the bio-based economy, and natural resources and conservation. The Department’s commitment to local and regional food systems is coordinated through the [Know Your Farmer, Know Your Food Initiative](#), which includes the [Know Your Farmer, Know Your Food Compass](#), a searchable map of USDA’s investments in local and regional food systems. See more at: <http://blogs.usda.gov/2015/07/15/lessons-from-the-field-a-new-series-for-food-hub-development/#sthash.EVwb18oJ.dpuf>

Arch Neurol/Vol.60, July 2003

Fish Consumption and the Risk of Alzheimer Disease

In the July 2003 issue of the ARCHIVES, Martha Clare Morris, ScD and colleagues report data from a prospective study in Chicago (815 people, aged 65-94 years). They found subjects who ate fish once a week or more had a 60% lower risk for developing Alzheimer disease than those who consumed fish less frequently. The data were statistically adjusted to correct for factors such as effects of age, sex, ethnicity, stroke, heart disease, etc.

Fish is a good source of high-quality protein, as well as polyunsaturated fatty acids (PUFAs) and low in saturated fats. However, the beneficial effects of PUFAs from fish may be counterbalanced by toxins as they may contain dangerous levels of polychlorinated biphenyls and mercury from coal-fired power plants.

<http://archneur.jamanetwork.com/article.aspx?articleid=784412>

More Aquaculture Day Photos!



Still not too sure about the bait part of fishing!

Teyanna catching some trout at Silver Moon Springs for a tasty meal



Who can identify the most fish - Dad or his sons?

THE COOK'S CORNER

Stuffed Brook Trout

Taken from Healthy Dishes with Wisconsin Fishes

- 4 butterflied brook trout fillets rinsed
- 1 cup walnuts of wild hazelnuts
- 1 1/2 Tbl. fresh thyme
- 1 1/2 Table fresh parsley
- 1 lemon, juiced
- 1 gal bag of wild or store-bought grape leaves, soaked in water overnight (or for at least an hr.)

Preheat grill to medium high heat
Puree nut, thyme and parsley I food processor. Add lemon juice.
Spoon mixture into trout and wrap completely with wet grapes leaves and then in aluminum foil.
Place on grill or surround in coals on open fire for 15 minutes.
Remove from grill and allow to cool.

WAA STORE

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Managing Wisconsin Fish Ponds - \$15

Best Management Practices for Aquaculture by Malison & Hartleb - \$40 for WAA Members, \$45 non WAA Members

NEW 3rd Edition - Recirculating Aquaculture Systems by Timmons & Ebeling - \$110

NCRAC Sunfish Culture Manual - \$20

Fish Hatchery Management , 2nd Edition - \$60

DVD's

UW -Spawning of Yellow Perch, dvd - \$10

Other

"Fish of Wisconsin" poster - \$5 ea. or \$30 for 10

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Editor

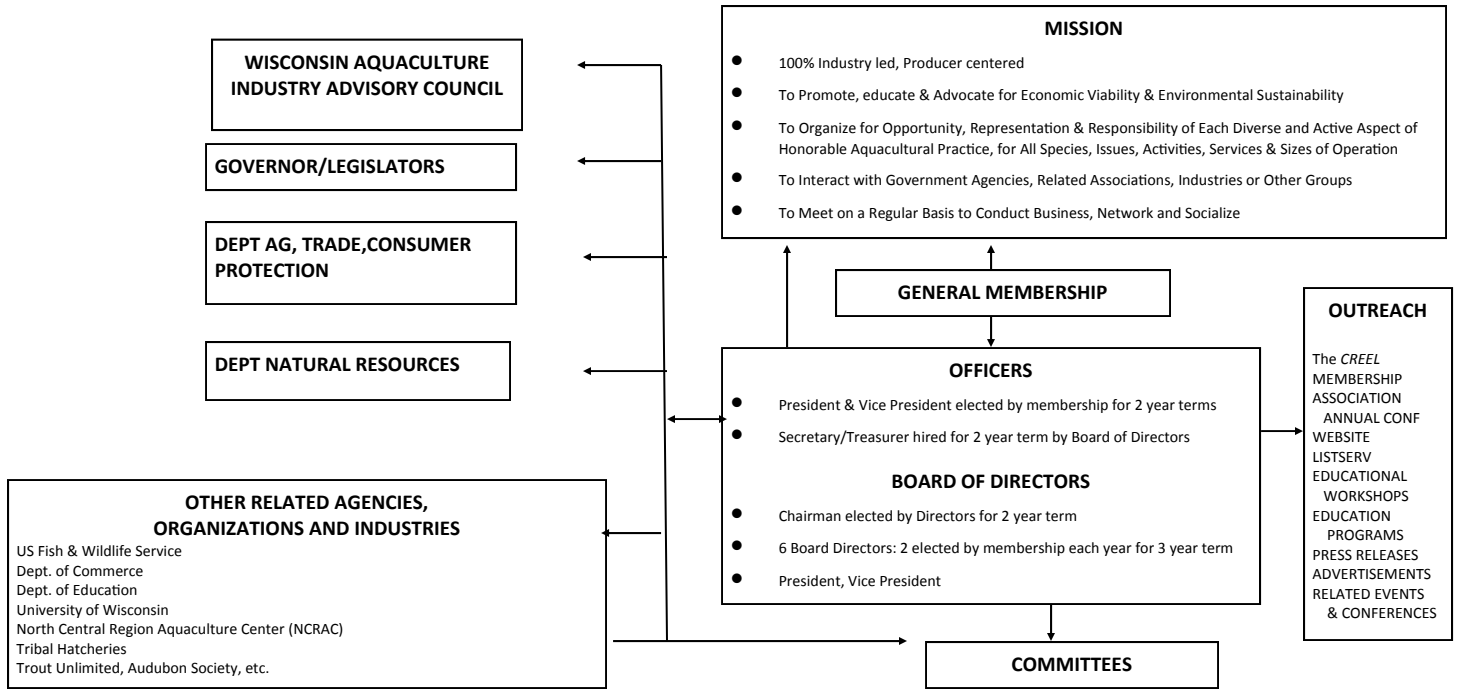
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