

REVIEWING THE NEEDS AND OPPORTUNITIES FOR AQUACULTURE WORKFORCE DEVELOPMENT IN FLORIDA

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Good afternoon everyone. Today, I will be giving you a brief review of the needs and opportunities for aquaculture workforce development in Florida. My talk is inclusive of all aquaculture sectors here in Florida. We will discuss what I've learned through my research, and by talking with Florida industry professionals

INTRODUCTION

- My name is Tyler Gibson, co-owner of Blue Thumbs Consulting LLC
- After 15+ years of working for and managing aquaculture farms, my wife Katie and I decided to focus our careers on consulting to share our expertise with other farms.
- The first step in this endeavor was to travel cross-country, meet with other farmers, and learn where their needs are lacking.
- Almost all of them said they needed good help; people who know what they're doing and are willing to do it.

To start, I'd like to introduce myself.

My name is Tyler Gibson. I am a co-owner of Blue Thumbs Consulting, LLC along with my wife Katie.

I've been working in the aquaculture industry since 2007, and together with Katie, have worked in North Carolina, Alaska, Big Island Hawaii, and now south Florida working for a mix of research, stock enhancement, and commercial programs. In 2023, we decided to start our own aquaculture consulting business so that we could share our knowledge with other farmers.

To kick off our new business, we travelled all over the country, hitting 36 states and all 4 corners of the contiguous US. We visited as many aquaculture farms as we could.

Across the whole country, everyone said the hardest thing to come by were employees that were qualified and willing to work.

WHAT WE (THE INDUSTRY) NEED:

Aquaculture professionals who know the basic biology of aquaculture, and the hands-on skills to operate systems.

Industry folks say they can only readily find:

- People who are mechanically inclined, but don't know much about the biology of aquaculture

OR

- People who have a strong biological education, but don't have hands-on skills needed at a farm



A strong economy begins with a strong, well-educated workforce.

Bill Owens

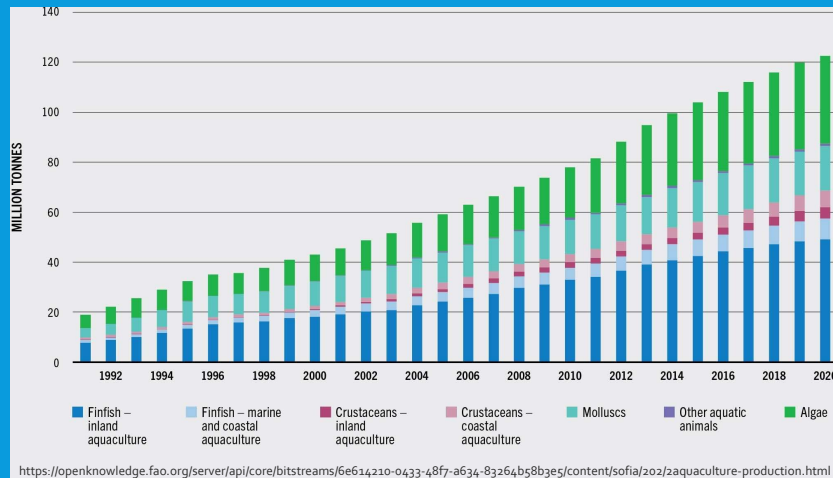
The aquaculture industry needs more people who “know their stuff” and who “know how to use their hands”.

After talking with several Florida farmers and aquaculture professionals, the story I heard repeatedly was that they can only readily find people who have one of the 2 requirements. Either they know their stuff, or they know how to use their hands. Once they're hired on, the farmer must train them in the other ½ of the skillset. The Florida farmers that I talked with said their labor force is primarily composed of the tradespeople who lack basic biology training.

This highlighted the need to me that young graduates need more hands-on learning opportunities, and the transitioning tradespeople need opportunities for biological learning to make them more equally equipped for the job.

We, the industry, need to empower people to be able to do these jobs if we want to expect qualified applicants.

HOW CAN WE MAKE IT HAPPEN?



So how do we make that happen?

Aquaculture is one of the fastest growing sectors of agriculture in the world. As the industry grows, so does the need for tradespeople. Our educational opportunities need to grow with it.

HOW CAN WE MAKE IT HAPPEN?

EMPOWER THE PEOPLE WE HAVE:

- Use short seminars at your farm to build your team's knowledge
 - "Lunch and Learn"
 - Webinars
 - Hands-on workshops
 - Online learning
 - Team cross-training

RECRUIT THE PEOPLE WE NEED:

- Reach out to HS's and CC's, put them in touch with job opportunities, hire the graduates
- Community engagement. Let people know fish farming is a career choice; let them know we exist
- Offer hands-on learning opportunities like internships and workshops

We need to empower the people we already have:

-we need to **create** opportunities for them to grow by giving them opportunities to learn hands-on, and biological, skills. Let your teams teach each other. Cross-training not only brings up the value of each employee but creates opportunities for team building.

-For example, you can schedule a lunch meeting once a week where someone talks to the team about a skill that not everyone may have. Have the speaker show how to replace a pump seal, explain the flow of water through a sand filter, teach the effects of rapid WQ shifts... little things add up.

We need to recruit the people we need:

-We need to reach out to high schools and community colleges, put them in touch with job opportunities, and hire the graduates.

-We need community engagement. People need to know that aquaculture is a career choice, and many opportunities exist throughout the state

-We need to offer hands-on learning opportunities like internships and workshops

The resources for aquaculture education are out there! We just need to put the people, the education, and the industry together

WHAT OPPORTUNITIES ARE AVAILABLE?



So, what resources for aquaculture education and workforce development are out there?

WHAT OPPORTUNITIES ARE AVAILABLE?

Several opportunities for high school, community college, and university students

- Internships
- Certification programs
- Coursework

For non-traditional students, the opportunities are not as easy to come by

- People working full-time that want a career change
- Can't afford to quit their job to do internship or go to school

Online learning opportunities are key!

I've talked with many aquaculture professionals, and researched to find what opportunities are available here in Florida. The following slides cover opportunities I've found through personal communications, and Google.

I found that there are many opportunities for traditional students to receive aquaculture education and skills training,

I did not find many opportunities for non-traditional students; the people working full-time already, and who don't have time to do a traditional education program

This is why online learning opportunities are critical to educating the non-traditional students transitioning to the aquaculture field

UNIVERSITY OPPORTUNITIES FOR AQUACULTURE EDUCATION



ROSENSTIEL SCHOOL
AQUACULTURE

UF | IFAS
UNIVERSITY of FLORIDA



HARBOR BRANCH

FLORIDA ATLANTIC UNIVERSITY

Ocean Science for a Better World®

FAU

CHARLES E. SCHMIDT
COLLEGE OF SCIENCE
Florida Atlantic University

Florida has several renowned universities with aquaculture programs. These schools generate researchers and commercial workers for the Florida aquaculture industry. Having employees with a strong, technical background in aquaculture and biology is very important to managing a successful fish farm. University graduates are typically recruited for management, supervisor, and upper-level technical roles due to their expertise.

The University of Miami aquaculture program is one of the most recognized aquaculture programs in the country. They contribute workers to aquaculture research and also commercial farms across the globe. They offer Bachelor's, Master's, and PhD options related to aquaculture and fisheries science.

The University of Florida offers bachelor's, graduate and PhD level education in Fisheries & Aquatic Science. Students can focus their research work in aquaculture to gain knowledge and experience in the field. Students can study at the UF main campus as well as at the Indian River Research and Education Center here in Fort Pierce, or at the Tropical Aquaculture Laboratory in Ruskin. The Tropical Aquaculture Lab also hosts a robust aquaculture extension program to assist farmers with production issues and holds educational workshops.

Florida State University offers bachelor's and graduate level education in biological and

environmental sciences, but students can get involved with their research hatchery that supports the Apalachicola Bay System Initiative (ABSI). The hatchery's focus is on research and production of eastern oysters, but other shellfish and microalgae culture work is done there as well.

FAU offers bachelor's, master's, and PhD levels of education related to aquaculture being jointly administered by the Charles E. Schmidt College of Science and Harbor Branch Oceanographic Institute. They are host to a 30-acre aquaculture development park which offers plenty of opportunities for students to build hands-on skills working with algae, shellfish, finfish, and IMTA (where the previously listed organisms are grown within the same system).

It is advantageous for farms to have some employees with this level of knowledge and education. Having someone with high-level understanding of the biological and mechanical aquaculture processes on your farm is important to protect your investment. Not every employee needs to be at that level, and not all companies can afford to hire a full staff of employees with university degrees. In my experience, many farm employees don't fall into that category.

HANDS-ON EDUCATIONAL EXPERIENCES FOR UNIVERSITY STUDENTS:



- HARVEST Internship Program



- Stock Enhancement Research Internship



- FSU Coastal & Marine Lab Summer Internships with ABSI



- Mote Marine Laboratory & Aquarium - Farmer Education Program in partnership with UF/IFAS Extension Sarasota County



- Florida Atlantic University (FAU) Harbor Branch Oceanographic Institute (HBOI) Summer Internship Program

I found several opportunities for university students to get hands-on education. These internships can teach students valuable working skills and increase their understanding of how aquaculture farms work.

Florida Sea Grant offers the HARVEST (Helping Aquaculture Reap Value and Enhance Student Training) Internship Program that pays university students for 20hr/wk to work hands-on with their aquaculture business partners

Mote marine lab offers a 8-wk Beginning Farmer Education Program with a focus on aquaculture and aquaponics

The FWC offers an un-paid internship to college students and recent grads to work with marine finfish culture and get hands-on experience.

FSU Coastal & Marine Lab offers paid summer internships (May to end of AUG) to work with the Apalachicola Bay System Initiative (ABSI) in their new oyster hatchery learning the full range of oyster aquaculture skills

Harbor Branch offers a 10-wk program to university students during the summer where they can get hands-on experience in an aquaculture research environment.

I'm sure there are many important programs that I didn't mention, but I am making the point that there are opportunities for university students to get hands-on training.

EDUCATIONAL EXPERIENCES FOR COMMUNITY COLLEGE STUDENTS



HILLSBOROUGH
Community College



Florida Aquaculture Association Certification Program

- Complete 150hrs working at an aquaculture farm for eligibility to take the certification exam
- 100 question exam, chosen from bank of over 200 questions
- Must score >60% to pass the exam and receive certification

Hillsborough Community College - Aquaculture Technology

- AS and CCC options

College of the Florida Keys

- Tropical Ornamental Mariculture Technician Certificate
- Internship part of the program

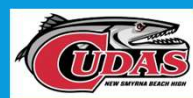
I could not find any internships or workshops advertised to community college students, but I did find several community colleges with aquaculture programs around the state. This may be due to internships being built into their programs.

Since not all community colleges have aquaculture degree and/or certification programs, the Florida Aquaculture Association (the FAA) has made it so that anyone who has worked at an aquaculture farm for more than 150 hours can qualify to take their certification exam. They must score greater than 60% correct to receive the Florida Aquaculture Industry Certification. The only caveat is that they must already have an aquaculture job/internship before being able to qualify to take the exam for an entry-level certification.

EDUCATIONAL EXPERIENCES FOR HIGH SCHOOL STUDENTS



ISLAND COAST
High School



Florida Aquaculture Association Certification Program

- Take Aqua1 and Aqua2 courses at your HS for eligibility to take the certification exam
- Can graduate HS with industry certification as aquaculture technician



Florida FFA supports aquaculture and holds an annual career development event (CDE) as a competition between HS FFA chapters where students undergo written and hands-on events to exhibit aquaculture skills

For high school students, where aquaculture classes are available, the FAA certification is a great opportunity to get ahead for an entry-level aquaculture job. Your class credits for Aqua 1 and Aqua 2 count as a qualifier to take their exam, so you can be industry certified right after graduation.

Atlantic High School in Port Orange offers the Academy of Aquaculture, Environment, and Marine Science where students receive hands-on training, and get introduced to the field of aquaculture.

If you are lucky enough to live in St. Augustine as a current high schooler, you can attend St Johns Technical HS Academy of Aquaculture where the curriculum includes hands-on aquaculture and aquaponics skills learned at their on-site RAS. You can get the FAA certification upon graduation.

Riverview High School in Sarasota collaborates with Mote Marine Lab and has their "Aquadome" facility with multiple aquaculture systems to teach students.

Island Coast High School in Cape Coral offers the Academy of Natural Resources where students can be a part of the Aquaculture and Hydroponic laboratory Program with hands-on experience in their on-site facility

New Smyrna Beach High also has a 3-4 yr aquaculture program where students learn all about aquaculture and can earn the FAA certification upon graduation as well.

The Florida Future Farmers of America is supportive of aquaculture and offers an annual career development event. This is a competition based on written and hands-on skill events to give students an opportunity to exhibit their aquaculture skills. Events like these give students a boost on their resume' and validate their skills to give them an advantage when entering the job market

HS Students who do not have aquaculture classes available to them can still qualify for the FAA exam eligibility by completing 150+ hrs working on an aquaculture farm.

EDUCATIONAL EXPERIENCES FOR NON-TRADITIONAL STUDENTS



There are many opportunities for traditional students from well-reputed programs across the state. However, many entry level positions do not necessitate a degree in aquaculture. Having a general understanding what you're doing in your aquaculture task, and why, is vital. That essential education, can be completed and verified by an online learning and certification system.

EDUCATIONAL EXPERIENCES FOR NON-TRADITIONAL STUDENTS



- Tutorials with quizzes for many aquaculture topics

- Multitude of informal, informational videos



WORKSHOP

- Oyster Aquaculture Certification classes (\$300)

The non-traditional students are the sector needing the most support and make up much of the work force in many farms. Florida is very supportive of aquaculture and aquaculture education, but I see this niche as a valuable sector of the job market that is not being used to it's potential. With the opportunity for online basic aquaculture education credentials, the industry could recruit so many more qualified candidates.

This is the sector that I want to see the industry focus on supporting. While recruiting traditional students to the field is great, they have the most opportunities to get in.

The 'non-traditional students' must gain their education around having a full-time life including their job, responsibilities, and often families to support. They can't walk away from a job to pursue education because they've got bills to pay and require full-time income. They are the ones learning at night, on the weekends, at lunch break.... Whenever they find some free time.

Online learning is critical for this sector of potential employees. Typically, online learnings are digestible (class sized) programs that allow the student to learn at their own pace (better retention), schedule (any time of day), and opportunity (hard to find free time).

You can see a few options for online learning about aquaculture where learners can teach

themselves, but it doesn't contain any hands-on components, or give you an industry-known certification. Youtube can be a large source of informal, informational videos.

I found 1 example of a certification workshop that I want to highlight. Tallahassee community college offers an oyster aquaculture certification workshop where they teach you everything about oyster farming and the business of it. Classes are in the evening (6-9), so it can be done around a full-time work schedule. The workshop is a 12-week program held in the evening where the students get hands-on training and end up with an oyster farming certificate. Just by offering this workshop in the evenings, they opened the opportunity for a lot more people to attend. The availability of the class is key , and I'm sure that contributes to the 300+ oyster farmers the program has graduated.

There are a few options out there for non-traditional students to educate themselves, but we (the industry and potential employers) are unable to evaluate their knowledge and hands-on skills without some kind of standardized evaluation to certify their competency. If we can provide this group of people with an online option, with some hands-on training that is accepted as an industry standard, then everyone wins.

RE-CAP

Your workforce is your most valuable asset. The knowledge and skills they have represent the fuel that drives the engine of business - and you can leverage that knowledge.

Harvey Mackay

- Many opportunities to develop aquaculture workers in Florida
 - Need to develop closer contact between educational programs and industry
- Programs to develop traditional students are in place for hands-on learning
- Non-Traditional Students need more opportunities to advance their education / qualification
- Industry needs to support a baseline certification that can be earned around a full-time work schedule, affordably

So, to recap what I've discussed: Florida has a strong aquaculture industry. To continue to grow, we need to recruit more qualified candidates to the work force.

- We have opportunities available for jobs, and we have people wanting them. We just need to focus on getting the two together.
- Traditional students have opportunities for hands-on learning available to them, and they should be encouraged to utilize them
- Non-traditional students, the people who have full-time jobs already, need our support to get aquaculture education and into our industry.
- This includes a certification program that can be completed on their time and budget
- If we can do these things, then we should be able to have a stronger workforce and recruit better candidates

WHAT WE CAN DO:

We, the industry, can help by:

- Helping to put ALL learners in touch with opportunities to enter the aquaculture workforce
- Be a resource for employers trying to find qualified employees
- Reach out to schools and job placement services to connect people with development/training resources
- More connection between education and industry



Bottom line: anyone we can recruit with any kind of hands-on skills and biological understanding will benefit the industry. Educators need to be working alongside industry professionals to offer opportunities for learning, and in turn create qualified workers for the industry. We may not have a perfect system in place, but as we focus on using the tools we have and continue to improve, then we are headed the right way.

THANK YOU FOR YOUR TIME!

Any additional questions or comments can be addressed to:

bluethumbsconsulting@gmail.com

Thank you everyone! I appreciate you taking your time today. I'm glad I got to speak to you all about what I see as the needs and opportunities for aquaculture workforce development in Florida. If we don't have time to address your questions or comments, please reach out to me at bluethumbsconsulting@gmail.com.

Does anyone have anything they'd like to contribute, or questions for me?