Florida Shrimp Aquaculture 2016

By Granvil Treece, Treece & Associates*

There are at least five commercial shrimp farms operating in Florida in 2016 and potentially some smaller ones that are not well known, plus the largest shrimp hatchery in the US is located in Florida.

1. Woods Fisheries operates a 54.6-acre shrimp farm (Gulf American Shrimp) located 5 miles inland near Port St. Joe, Florida. Mark Godwin is the farm manager and has been sustainable since 2003 when they purchased an old catfish farm. Produced 217,211 lbs. in 2015.

2. American Mariculture, Inc. operates an indoor shrimp production system on 17-mile long Pine Island and is on 8.5 acres. Robin Pearl is the owner and manager. Production proprietary.

3. Florida Organic Aquaculture, LLC., operates an indoor shrimp raceway production system on a 122-acre site near Fellsmere, Florida. 8.4 acres are under roof in growout (two raceway pole barns) and a total of 33.6 acres under roof are planned with 8 large buildings, plus a hatchery, nursery and processing. Production proprietary.


5. Shrimp Improvement Systems (SIS) is a L. vannamei hatchery located in the Florida Keys at Islamorada. Sell broodstock and postlarvae.

6. Fresh Shrimp USA, LLC. Indiantown, Florida. They have a 40-acre site which they plan to grow shrimp outdoors in lined ponds using biofloc techniques. Positive initial production reported in 2015 but no detail, only with projections for 2016.

Florida map showing location of major commercial shrimp aquaculture facilities

(Modified From Rosenberry, 2014).
1. Woods Fisheries, Inc. owns farm near Port St. Joe, Florida. (Gulf American Shrimp)

Woods Fisheries Processing Plant in Port St. Joe.

Above: View of Gulf American Shrimp farm from the air.

The Gulf American Shrimp Farm is a converted catfish farm 5 miles inland, which was 300 acres. The shrimp farm is now 54.6 acres. The ponds are 5 acres in size and they utilize brackish ground water which is about 5 ppt salinity. They began working with the shrimp farm in approximately 2003 and have had some very good and consistent successes in production for an inland farm. The farm manager is Mark Godwin, whom is related to the Wood’s family owners.
Examples of some of the production years from Mark Godwin are:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>STOCKING</th>
<th>AVERAGE</th>
<th>FCR</th>
<th>POUNDS/acre</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>25</td>
<td>49.40%</td>
<td>1.43</td>
<td>3421</td>
<td>(one pond)</td>
<td>(one pond)</td>
</tr>
<tr>
<td>2007</td>
<td>25</td>
<td>35.60%</td>
<td>1.81</td>
<td>2278</td>
<td>15.68</td>
<td>55.92</td>
</tr>
<tr>
<td>2008</td>
<td>30</td>
<td>41.70%</td>
<td>1.41</td>
<td>2926</td>
<td>33.26</td>
<td>51.47</td>
</tr>
<tr>
<td>2009</td>
<td>39.3</td>
<td>43.40%</td>
<td>1.53</td>
<td>3606</td>
<td>30.00</td>
<td>60.24</td>
</tr>
<tr>
<td>2010</td>
<td>39.3</td>
<td>43.80%</td>
<td>1.70</td>
<td>3593</td>
<td>19.87</td>
<td>58.50</td>
</tr>
</tbody>
</table>

In some years the product is sold before it is produced and most is now going to the organic food industry for a higher price. Average weight of each shrimp in 2015 was 25.9 grams. Information provided by Mark Godwin.

2. American Mariculture, Inc. Bob Rosenberry (Shrimp News International, June, 2014), gave details from Robin Pearl, president of American Mariculture, Inc., whom operates an intensive shrimp farm in St. James City on Florida’s Gulf Coast. Their shrimp are raised without chemicals, antibiotics or preservatives, and marketed under the Sun Shrimp brand. American Mariculture’s farm is located on 17-mile long Pine Island, the largest island off Florida’s west coast. According to Pearl, “over the years, a variety of agriculture operations have struggled on the island due to the intrusion from the shallow saltwater aquifer. But the pure salt water works just fine for farming shrimp. It’s a good thing that we’re able to use farmland that really hasn’t been good for anything.”

The company grows Pacific white shrimp, *Litopenaeus vannamei*, at its biosecure farm that consists of 8.5 acres of rectangular tanks, all under greenhouses. For more details see Rosenberry, 2014. Pearl said that they are planning an expansion.
American Mariculture, Inc. on 17-mile long Pine Island, Florida

American Mariculture greenhouses.
3. Florida Organic Aquaculture, LLC. (FOA) utilizes 30-32 ppt salt water from a well 2,600 feet deep. They are located inland at Fellsmere, Florida. FOA has looked into growing Salicornia beds (a succulent salt water plant used in the health food industry and as animal feed once it is cut and dried), fed by their effluent. They are also looking at growing sea asparagus. The 2,600 feet deep well cost $650,000, and provides water at a perfect salinity for growing shrimp and for establishing a hatchery (30-32 ppt), which will help the company be more integrated and less dependent upon other companies to provide seed. Their maturation and hatchery buildings were completed in 2014, and provide most of the company’s postlarval shrimp needs for their nursery phase. The second of 8 planned raceway growout buildings is now complete and a nursery building is in operation. Eight million dollars have been invested into this project thus far and several new businesses have been established with 40 direct jobs provided and 300 indirect jobs. FOA’s goal is to create 200 jobs with an estimated economic benefit of $5.6 million per year for the state. FOA has been selling shrimp fresh or frozen, and they have a processing plant with larger processing plant in the planning stage. After the initial year of selling fresh shrimp at the farm and freezing the excess at the farm’s plant, they started quick freezing the product and the majority of their product is now sold frozen. Their new retail marketing store was opened for business in 2015. Cliff Morris is the founder and CEO of FOA and you can follow their progress on Facebook, https://www.facebook.com/HappyHealthyShrimp.
Temporary Florida Organic Aquaculture Office outside Fellsmere, Fla. Building is leased and they plan to build their own office.

Overall plan for the site.
Florida Organic Aquaculture, LLC has two existing structures like the one below and plans for 6 more in the future. The nursery and hatchery are the smaller buildings on the far end. This growout building is 4.2 acres in size. A total of 33.6 acres under roof are planned.

One of 8 planned raceway buildings, with nursery and hatchery buildings in the background.
Lined raceways located in metal, insulated buildings with temperature control.
Newly stocked raceway at Florida Organic Aquaculture

Florida Organic Maturation Room.
FOA larval rearing room.

FOA hatchery under construction and completed in 2014.
FOA nursery building which is now completed and operational.

FOA’s second growout building with larger raceways than the first building.
Automatic belt feeders used in growout raceways and nursery tanks.

New nursery building up and running.
FOA’s new retail shrimp store in Fellsmere, Fla. Farmer’s fresh produce also available.

Frozen product at FOA’s shrimp store.
Inside shrimp store.

4. Ithuba Shrimp. Web site: [www.ithubashrimp.com](http://www.ithubashrimp.com). Owner, Les Knoesen. Fellsmere, Florida (near the Florida Organic Aquaculture FOA facility). Les is from South Africa and one of the first investors into FOA. He built his own smaller facility and uses the same techniques as FOA and hauls water from the FOA well. The facility is small but expanding and has very impressive production results using zero water exchange biofloc techniques.
The people affiliated with Ithuba Shrimp (photo from their web site).
5. Shrimp Improvement Systems (SIS). SIS is the world's leading provider of shrimp broodstock. SIS produces genetically improved and Specific Pathogen Free *L. vannamei* shrimp broodstock and has initiated the breeding of *P. monodon* and *L. stylirostris*. Mr. Ed Scura was the director for many years and continued after it changed hands or they started a “strategic alliance” with Central Proteinaprima (CPP) in Indonesia. SIS provides their broodstock.

Their breeding facilities are currently located in Hawaii, Singapore and India. To lower the hurricane risk they moved their genetic selection program to Hawaii.

Shrimp Improvement Systems (SIS) [www.shrimpimprovement.com/](http://www.shrimpimprovement.com/)

Plantation Key, Florida. Tel. (305) 852-0872

SIS’s state-of-the-art production centers located in the USA and Asia include a Nucleus Breeding Center for *L. vannamei*, *Penaeus* Breeding Center, Broodstock Multiplication Centers and *L. vannamei* Shrimp Hatcheries.

SIS Florida is the original company facility that began operations in 1998 in the Florida Keys. It was chosen for its pristine waters, natural protected areas and resulting high level of biosecurity. The 3 Ha site contains the genetic nucleus for *L. vannamei* and also houses a broodstock multiplication facility with the capacity to produce and ship about 120,000 commercial breeders per year.

SIS Florida has a 15-year history with SPF as documented by results of a quarterly sampling program of stocks that is submitted for PCR analysis to the Aquaculture Pathology Laboratory at the University of Arizona. The facility is certified annually by the State of Florida as compliant with Best Management Practices and maintains a yearly certification for SPF status with the US Federal Animal and Plant Health Inspection Service (APHIS). has a strategic alliance with Central Proteinaprima (CPP) in Indonesia ([http://www.cpp.co.id/](http://www.cpp.co.id/)) and supply broodstock to their hatcheries and farms. CPP is one of the largest integrated shrimp aquaculture operations in the world.

SIS works to improve the performance of aquaculture stocks worldwide. They are one of the few companies that can provide shrimp postlarvae year-round to the indoor, intensive shrimp aquaculture projects in North America.

The following photos and graphs with data are from Google Earth and the SIS web site.
6. Fresh Shrimp USA, LLC.

In the next three years, after a 15 million-dollar planned investment, Fresh Shrimp USA, LLC, owned by Zegate, Inc., expects to produce six million pounds of head-on shrimp per year from its 40-acre site in Indiantown, Florida. Zegate was founded in 2011 by Adrián García and Rafael Zelaya, a 28-year industry veteran.

Using lined ponds and biofloc technology, it has successfully harvested its second crop from the first of six modules and started construction of a second module. It expects to harvest 600,000 pounds of 26-gram shrimp in 2016. Each production module covers 3.5 acres. They say stocking densities, growth and survival levels have all surpassed expectations.

Zegate is also building a processing plant that will soon be able to service shrimp and tilapia farmers in South Florida. It is also in the process of reviewing joint ventures with other producers.

**Information:** Rafael Zelaya, Zegate, Inc., 21125 SW Farm Road, Indiantown, Florida 34956, USA (phone 1-772-324-5290, email rzelaya@zegateinc.com, webpage www.zegateinc.com).

Aquaculture Regulations in Florida

The Florida Aquaculture Policy Act declared aquaculture a form of agriculture and the Department of Agriculture and Consumer Services is responsible for permitting aquaculture and coordinating the other state agencies in the permitting process (Fla. Stat. Ann. § 597.002). Florida has a state aquaculture plan that requires all aquaculture producers to become permitted or “certified” and provides aid in applying for permits to those within the industry (Fla. Stat. Ann. §§591.0023, §597.004). Agricultural (including aquaculture) operations in Florida do not require county permits. Florida law (see Florida Statutes Chapter 570) requires that shrimp farms and other aquaculture operations register with the Florida Department of Agriculture and Consumer Affairs/Services. The Certificate of Registration costs $50 and requires that the farmer agree to follow the Department’s “Best Management Practices” (BMP’s). If the farmer follows the BMP’s, the Department of Environmental Protection is prohibited from charging the farmer with environmental violations (such as the discharge of sewage or effluent) into surface waters.

The regulations (see Florida Administrative Code Chapter 5L-3) do not require aquaculturists “to follow the effluent treatment BMP’s” if they use “recirculation systems” or “do not discharge to waters of the state”—in those cases, they are labeled as having a “minimal impact on the surrounding environment.” Even if they do not meet those exceptions, the BMP’s for effluent treatment require only a retention, evaporation, or percolation pond or vegetated filter strip (Rosenberry, 2014).

The Florida regulatory agency in charge of groundwater requires 7 test wells to be sampled yearly by Woods Fisheries shrimp farm (Gulf American Shrimp) outside Port St. Joe, for potential salination of drinking water (personal communication Mark Godwin, General Manager of Woods Fisheries farm outside St. Joe, Fla., August 2013).

Literature Cited


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