

Economics, Marketing and Coastal Research



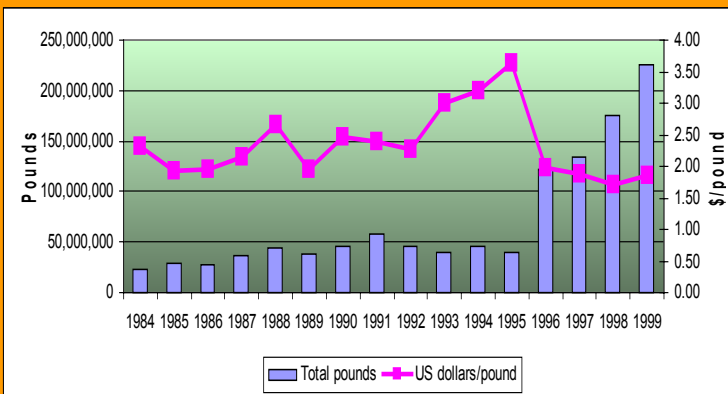
Dr. Benedict (Ben) C. Posadas
Assistant Extension/Research Professor of Economics

Crawfish and Freshwater Prawn Workshop
Leaksville, Mississippi

OVERVIEW

- Major production areas and countries, and long-term trends
- US consumption and domestic prices
- US production, acreage, and investment and operating costs
- Major constraints facing the industry

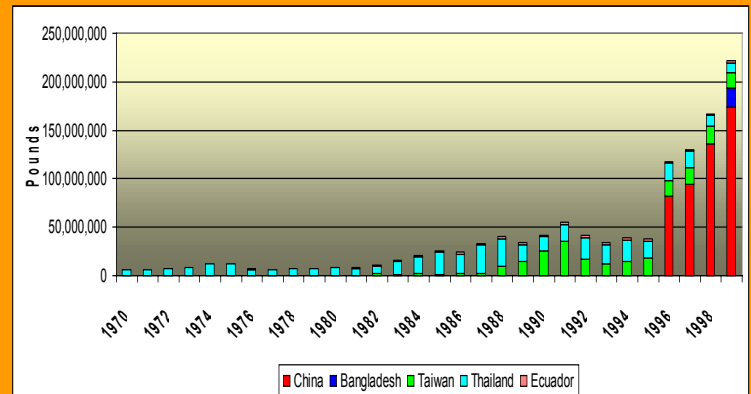
World Giant River Prawn (GRP) Production (FAO)



June 5, 2002 MSU-Coastal Research & Extension Center

3

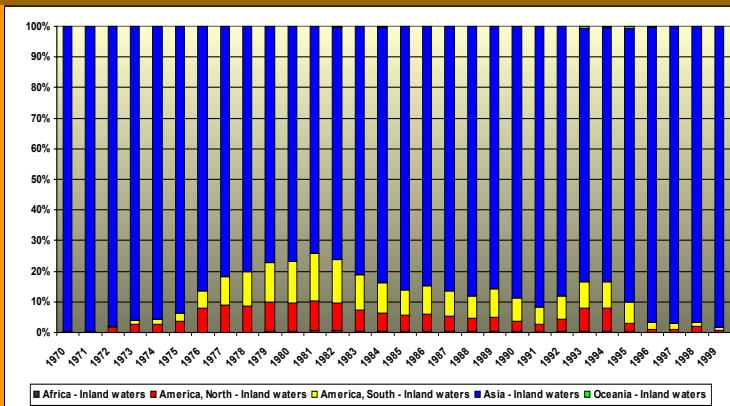
Top 5 GRP Producing Countries (FAO)



June 5, 2002 MSU-Coastal Research & Extension Center

4

Percent Distribution of World GRP Production by Areas (FAO)



June 5, 2002 MSU-Coastal Research & Extension Center

5

Freshwater Prawn (FWP) Species

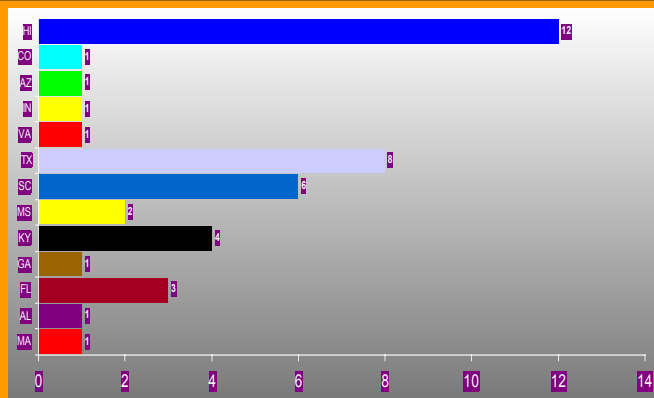
- **Market name**
 - Shrimp, Freshwater
- **Scientific name**
 - *Macrobrachium rosenbergii*
- **Common name**
 - Giant Freshwater Prawn



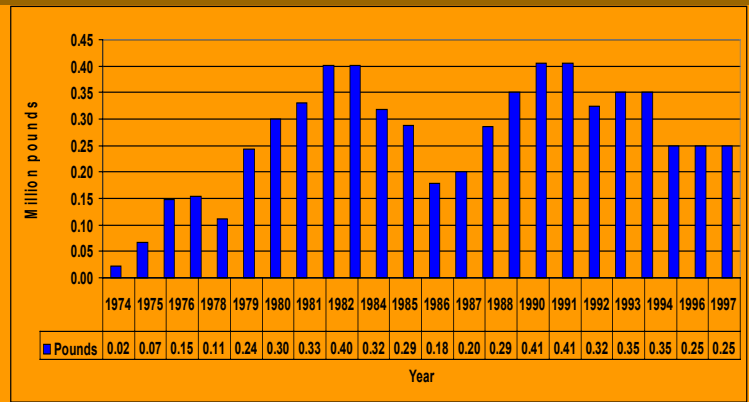
June 5, 2002 MSU-Coastal Research & Extension Center

6

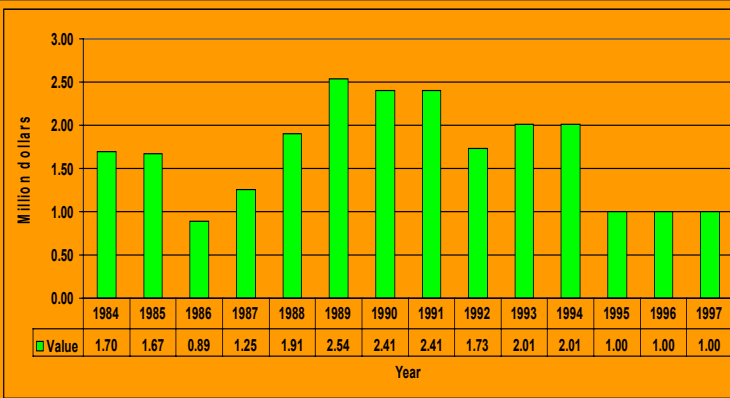
Number of U.S. Shrimp Farms, 1998 (USDA)



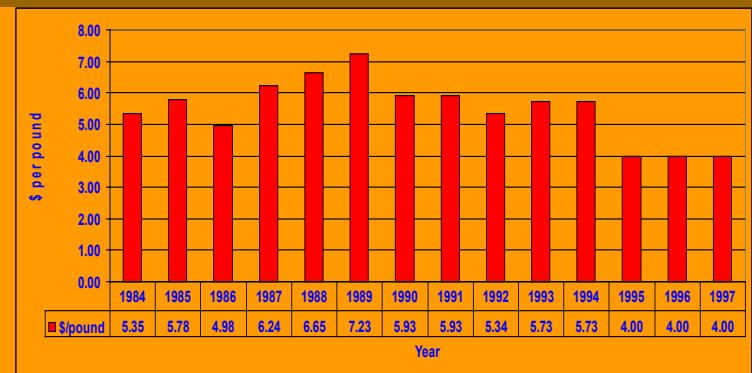
U.S. FWP Production (FAO, NMFS, JSA)



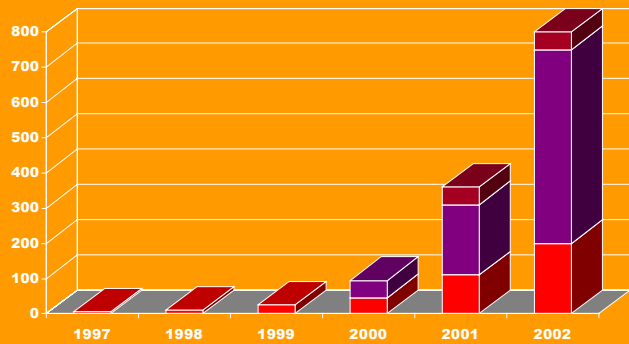
Value of U.S. FWP Production (FAO, NMFS, JSA)



Imputed FWP Final Prices Paid by U.S. Processors and Dealers



Estimated U.S. FWP Acreage (??)

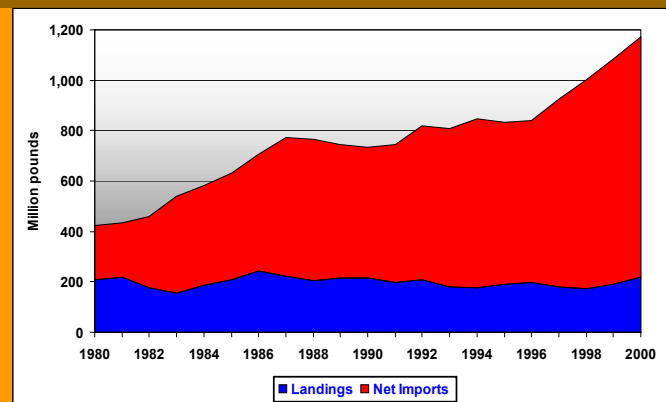


June 5, 2002

MSU-Coastal Research & Extension Center

11

U.S. Shrimp Consumption (NMFS)

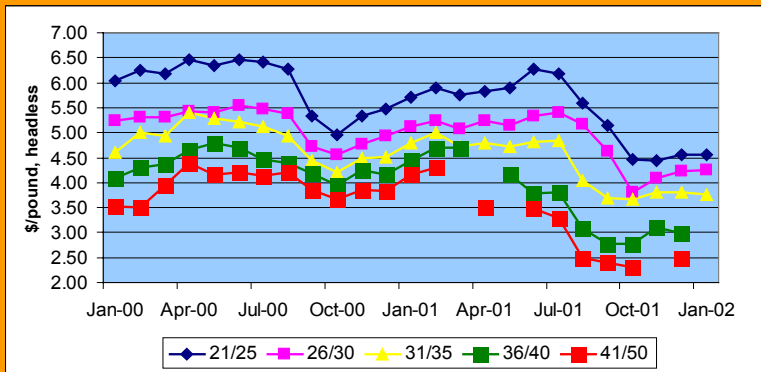


June 5, 2002

MSU-Coastal Research & Extension Center

12

Northern Gulf of Mexico Shrimp Ex-vessel Prices (NMFS)

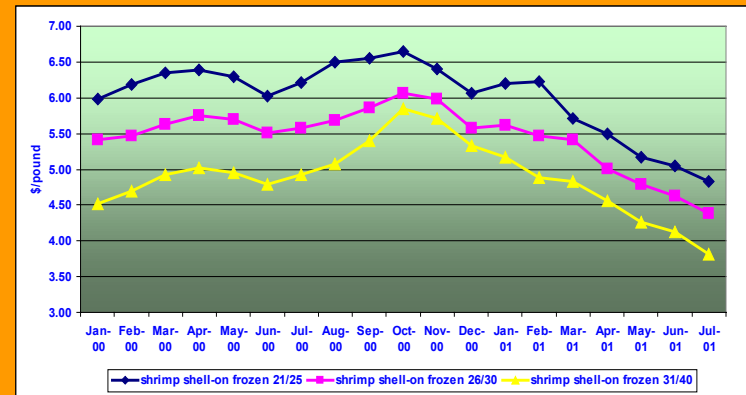


June 5, 2002

MSU-Coastal Research & Extension Center

13

Imputed U.S. Shrimp Import Prices



June 5, 2002

MSU-Coastal Research & Extension Center

14

FWP Marketing in the U.S.: Niche versus Wholesale Commodity Markets

● Selling Live FWP

- **Cost of production**
- **Cost of harvesting**
- **Cost of live-hauling or shipping**
- **Hauling or shipping and price risks**
- **Marketing permit**
- **Limited market information**

● Selling Fresh or Frozen FWP

- **Cost of production**
- **Cost of harvesting**
- **Costs of chilling or processing, packing and shipping**
- **Price risks**
- **Limited market information**

Pond Production System

- Single enterprise farm
- One crop per year
 - Early May to late September
 - > 120 culture days
- 61 land acres available
- FWP juveniles and commercial feed are available
- Input prices are based on Mississippi markets
- Feed conversion ratio is 2.5:1
- Stocking density is 20,000 # per water acre
- Harvest size is < 12 # per pound
- Prawn yield is 1,150 pounds per water acre
- Experimental-Commercial yield gap is 8 %

Initial Investment Requirements



- 25 two-water-acre ponds, adequately sloped
- common or single harvesting sumps
- permanent aeration & electrical
- feeding equipment & storage
- water well, pump and plumbing
- weed control equipment
- tractor, truck & storage building

**\$266,704 per farm,
\$10,668 per pond or
\$5,334 per water acre**

June 5, 2002

MSU-Coastal Research & Extension Center

17

Pond Construction Cost



- Earth moving
 - adjacent ponds
 - @ \$0.80/cubic yard
- Drainage structure
- Drain channel
- Gravel
- Vegetative cover

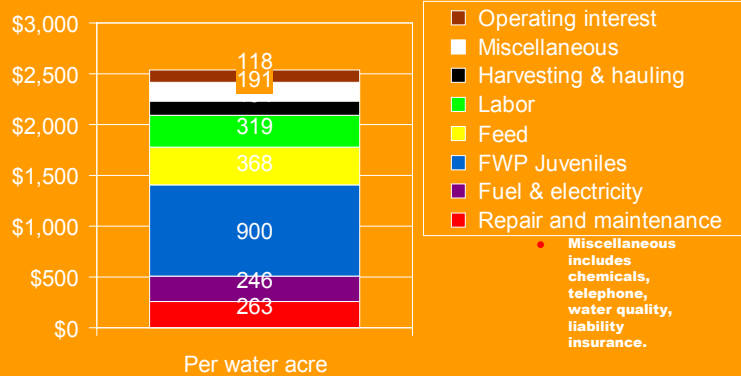
**\$60,548 per farm,
\$2,422 per pond or
\$1,211 per water acre**

June 5, 2002

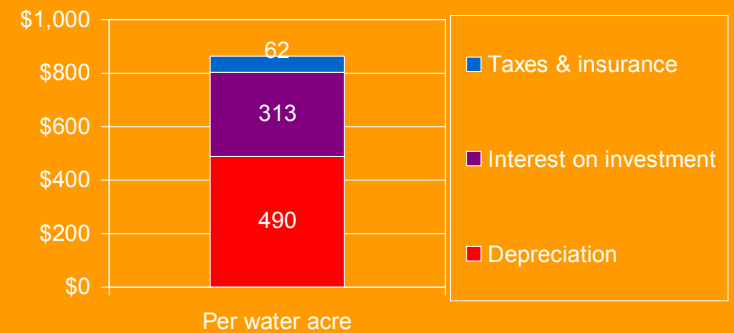
MSU-Coastal Research & Extension Center

18

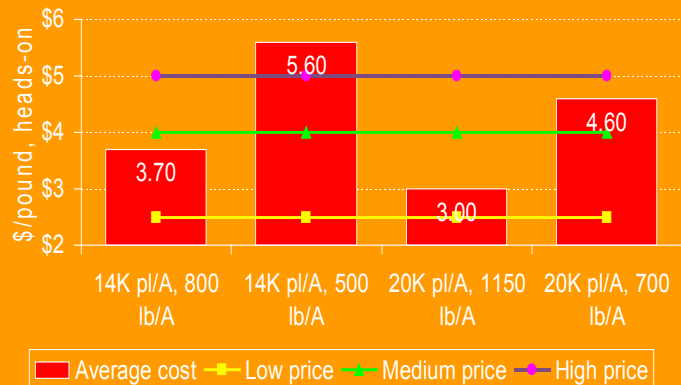
Pond Production Variable or Operating Costs



Pond Production Fixed or Ownership Costs



Farm-Gate Prices and Average Cost

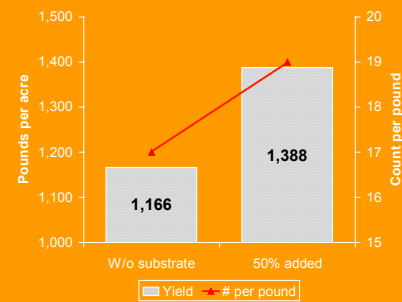


June 5, 2002

MSU-Coastal Research & Extension Center

21

Horizontal Substrate Year 1998, 36K PL/A

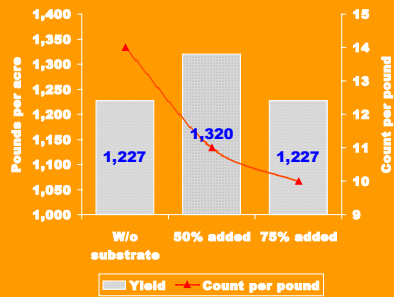


June 5, 2002

MSU-Coastal Research & Extension Center

22

Horizontal Substrate Year 1999, 36K PL/A

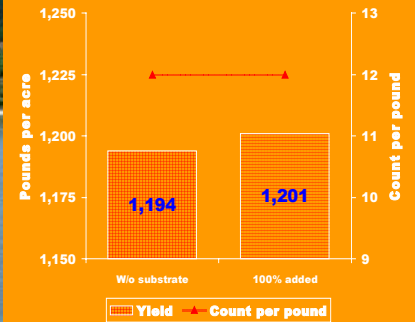


June 5, 2002

MSU-Coastal Research & Extension Center

23

Vertical Substrate Year 1999, 20K PL/A

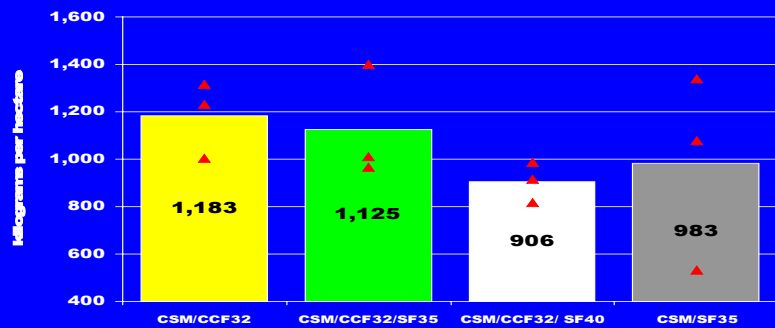


June 5, 2002

MSU-Coastal Research & Extension Center

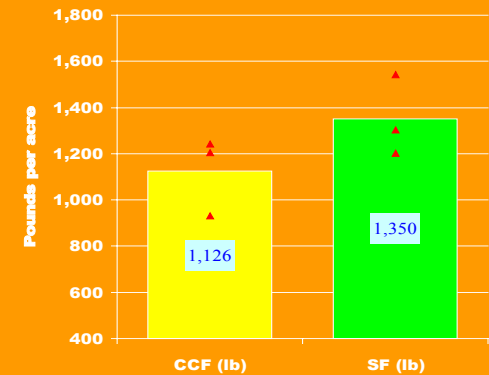
24

Feed and Feeding System Year 2000, 18K PL/A



Feed and Feeding System Year 2001, 20K PL/A

- Channel Catfish Feed
 - pelletized
 - sinking
 - 32% protein
- Shrimp Feed
 - pelletized
 - sinking
 - 35% protein



CONSTRAINTS FACING THE PWP INDUSTRY

- **Lack of local nurseries**
 - Less than half a dozen nurseries nationwide
 - High price for nursed juveniles
 - Stress during transport to distant sites
 - Need for on-site nursery facilities
- **Low survival in grow-out**
 - Exp-com grow-out yield gap
 - Relatively low production
- **Insufficient processing, transporting & marketing infrastructure**
 - Except in traditional shrimping areas
 - High transport mortality of live FWP

Mississippi State University FWP Research and Extension Websites

- **National Warmwater Aquaculture Center, Mississippi State University (MSU-NWAC)**
<http://www.msstate.edu/dept/tcnwac/>
- **Coastal Research and Extension Center, Mississippi State University (MSU-CREC)**
<http://www.msstate.edu/dept/crec/crec.html>
- **Freshwater Prawn Information**
<http://www2.msstate.edu/~clo1/prawn/>

How to Get FWP Information?

- Go to msucares.com
- Go to Aquaculture
- AND/OR
- Go to Centers and Institutes
- Go to Coastal Research and Extension Center