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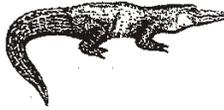
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FLORIDA  
AGRICULTURE



June 1994

# AQUACULTURE

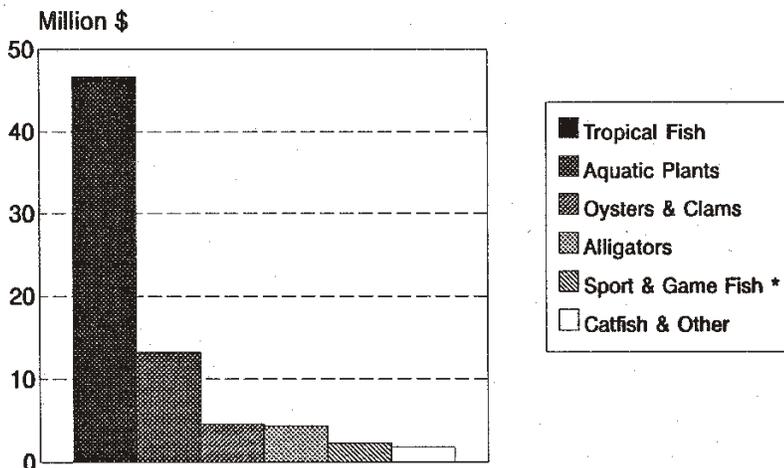


## FLORIDA AQUACULTURE SALES TOTAL \$73 MILLION IN 1993

Results of a recent survey conducted by the Florida Department of Agriculture revealed that Florida growers sold \$73 million in aquacultural products during 1993. This compares with \$54 million (based on a similar survey) in 1991 and \$51 million in 1989. The first survey for Florida Aquaculture estimated sales in 1987 at only \$35 million. The 1993 sales were more than double 1987 sales and represent a 35 percent increase from two years earlier. There were about 10,300 acres of land, including water surface area, devoted to aquaculture production in 1993. This compares with 8,100 acres reported in 1991. Aquatic species identified in the survey were tropical (ornamental) fish, catfish, alligators, oysters, clams, sport and game fish, crawfish, eels, tilapia, shrimp, aquatic plants and other minor aquatics. The value is based on farm gate sales of aquatics produced by Florida growers and excludes harvest from open waters or the wild. Growers sold another \$7.3 million worth of tropical fish which they imported for immediate resale. All statistics shown in the tables of this report are for net Florida production and value and exclude imports and purchases from other Florida producers for immediate resale.

There were 523 active producers of which 501 reported sales in 1993. As in previous surveys, tropical fish continued to dominate Florida's Aquacultural industry. There were 187 active growers of tropical fish accounting for \$46.7 million, 64 percent of total sales. Tropical fish accounted for 60 percent of total sales in 1991. Aquatic plants, with 67 growers and \$13.2 million net sales, were second in value. Oysters and clams, valued at \$4.63 million, were sold by 191 growers. Alligators, with 38 active growers contributed \$4.43 million from combined hide and meat sales. Sport and game fish sales totaled \$1.23 million and sales from tilapia reached \$1.04 million. Thirty seven catfish growers contributed \$0.55 million. All other aquatic sales totaled \$1.24 million from 13 growers.

## Aquaculture Value of Sales Florida, 1993



\* Includes Tilapia

The survey also identified 50 other potential new growers with intentions to produce aquacultural products for sale in 1994 or later. The largest increase is expected in catfish with 13 new growers. There are 11 growers each for tropical fish and aquatic plants expected to have sales for the first time in 1994 or later. There are six new clam growers and three new sport and game fish producers with intentions to have future sales. Among other species there are six other operations expected to have aquatic production in 1994 or later.

Based on survey findings, production of tropical fish, aquatic plants, and clams will show slight to moderate increases in 1994. Tropical fish production is well established in Florida, with orderly growth expected to continue. Overall, the aquacultural industry will likely continue good growth and development in Florida, with its mild climate and vast waterways. However, some hindrances to expansion reported in past surveys include obtaining finances, government regulations, poor market for production, and problems with pilferage.

## TROPICAL FISH SALES REACH \$46.7 MILLION IN 1993

Net sales of tropical fish totaled \$46.7 million from 187 growers during 1993, up \$13.9 million from 1991 and \$13.0 million above 1989. The first survey showed sales at only \$21.7 million in 1987. Egg layers contributed \$28.7 million in net value while sales of livebearers totaled \$18.0 million. Nearly all of the increase is from egg layers while production and sale of livebearers has remained steady since 1991. Egg layers imported for immediate resale were valued at \$4.6 million in 1993 while the value of livebearer imports was \$2.7 million. Combined imports were up only three percent from 1991, thus representing a much smaller percentage of total sales. Purchases from other growers totaled \$9.9 million in 1993. Net sales do not include value of imports or value of purchases from other growers. Producers used 52.7 million square feet of water surface area. Fifty five percent of the water surface was used for growing egg layers and the remaining 45 percent was used for growing livebearers. These percentages reflect a significant shift from livebearing tropical fish to egg laying type since 1991.



Some of the more prominent species of tropical fish sold commercially for ornamental use are guppies, mollies, swordtails, variatus, platies tetras, gouramies, goldfish, cichlids, barbs, and tropical catfish. Fish harvested from the wild are not included in this survey. Tropical fish production is centered in Hillsborough and Polk counties with smaller concentrations in Dade and Palm Beach counties. Current growers expect to use two percent more water surface area this year than they used in 1993. In addition, there are 11 new growers expecting to produce tropical fish this year or later.

## AQUATIC PLANTS ROSE TO \$13.2 MILLION IN 1993

Net sales from 67 growers of aquatic plants reached \$13.2 million during 1993. This compares with sales of \$9.9 million reported by 79 growers in 1991. Aquatic plants include plants for aquariums, watercress for food, and farm produced plants used in wetland restoration. Sales do not include harvest from the wild or resales of plants purchased from other growers. Also, plants imported for immediate resale are not included in the total. In 1993 plants imported for immediate resale were valued at \$1.1 million. Eleven new growers are expected to produce aquatic plants in 1994.

## TROPICAL FISH AND AQUATIC PLANTS, FLORIDA 1993

Specie	Number of growers	Water surface		Value of sales 1993
		1993	1994 1/	
	Number	1,000 sq. feet		1,000 dollars
Egg layers	151	28,978	30,020	28,738
Livebearers	116	23,733	24,005	17,960
<b>Total</b>				
Tropical fish	187 2/	52,711	54,025	46,698
Aquatic Plants	67	18,991	19,876	13,153

1/ Includes area only for growers having sales in 1993.

2/ Total reflects some growers with both egg layers and livebearers.

## CATFISH PRODUCTION DECLINES TO \$0.55 MILLION

During 1993 catfish sales totaled \$0.55 million from 37 growers using 1,287 acres of water surface. These growers expect about the same acreage in 1994. In addition, there are 13 other growers with intentions to produce catfish in 1994. By comparison, sales reported by 62 growers in 1991 amounted to \$1.96 million. Catfish production is concentrated in north Florida and the Panhandle.

Catfish sold for food in 1993 totaled 336,000 pounds, down sharply from the 1,853,000 pounds sold for food in 1991. Value of sales for food in 1993 was \$349,000. The average price was \$1.04 per pound, 14 cents per pound more than in 1991. Growers received \$203,000 from sales of fingerlings and stocker size fish.

## ALLIGATOR SALES STEADY AT \$4.43 MILLION

Combined sales of alligator hides and meat during 1993 held steady at \$4.43 million compared with \$4.39 million in 1991. Thirty eight growers sold 36,900 hides at an average price of \$88 per hide, for a total value of \$3.25 million. Some growers delayed butchering due to low prices. While the number of hides sold in 1993 increased 85 percent from 1991, the value per hide declined over 50 percent from the average of \$179 in 1991. Producers also sold 234,600 pounds of meat, about 6.4 pounds per gator for an average of \$5.03 per pound or a total of \$1.18 million. The 38 active growers reported a total inventory of live gators at 101,600 as of February 1, 1994. This compares with 114,500 on hand February 1, 1992, suggesting a relatively steady level of hide sales.

**COMMERCIAL ALLIGATOR INVENTORY  
BY TYPE, FLORIDA, FEBRUARY 1, 1994**

Growers	Brood stock	Hatchlings	All other	Total
Number				
38	7,200	27,400	67,000	101,600



**OYSTER SALES NEARLY \$1.0 MILLION**

During 1993, Florida growers sold oysters valued at nearly \$0.97 million, down from \$1.37 million in 1991. There were 30,400 bushels of oysters sold by 18 producers at an average price of \$32.05 per bushel. In addition, two other producers were expecting to begin production in 1994 or later. According to the National Marine Fisheries Service, \$9.2 million worth of oysters were harvested from leased area and open or public waters off the coast of Florida in 1993. Only a small percentage of the total was reported as production from leased areas. Oyster production is expected to increase based on seedings reported by growers. Reports for survival of oysters seeded to harvest averaged 50 percent. Many growers do not seed oysters. They spread shells in the leased area and oysters from the wild lay eggs on the prepared beds. In such a case growers cannot determine the survival rates. Storms during the growing season damaged beds and reduced harvest in some areas.

**CLAM PRODUCTION ROSE TO \$3.66 MILLION**

During 1993, sales of clams produced by Florida growers totaled \$3.66 million, a three fold increase from the \$1.18 million in 1991. The 173 growers, including graduates of "Project OCEAN", sold 38,138,000 clams for an average of 9.6 cents per clam. There are six additional growers expecting to produce clams in 1994 or later. The National Marine Fisheries Service reports sales, including clams produced from areas leased from the State and open harvest, at \$7.3 million in 1993, up sharply from 1991. Production has centered along the east central and northeast coastal counties, but recent graduates of "Project OCEAN" at Cedar Key are expected to harvest a significant volume of clams this year off the coast of Dixie and Levy counties.

Seeding in 1994 is expected to increase sharply to 114 million clams. Survival rate to harvest was reported to average 65 percent in 1993, up from 58 percent in 1991. Improvement in seed quality contributed to the higher survival rate.

**TILAPIA SALES REACHED \$1.04 MILLION**

During 1993, tilapia sales totaled \$1.04 million. This compares with \$0.57 million in 1991. The 1993 sales were reported by 19 growers compared with 16 growers in 1991. Some of the tilapia are produced in leased waters that were formerly phosphate mines. Growth is expected to be steady. There are two new growers expecting to start growing tilapia in 1994.

**NUMBER OF CLAMS AND OYSTERS  
SEEDED BY YEAR SEEDED, FLORIDA**

Year seeded	Clams	Oysters 1/
Thousands		
1992	68,877	251
1993	87,878	501
1994 intentions	114,000	560
Survival to harvest	Percent 65	50

1/ Many growers do not seed oyster beds. Thus, the relatively low amount reported as seeded.

**SPORT AND GAME FISH SALES  
REACHED \$1.23 MILLION**

Sales from sport and game fish reached \$1.23 million in 1993. This compares with \$0.79 million in 1991. There were 13 growers who reported sales in 1993. Three new producers are expecting to start production in 1994.

**OTHER AQUATICS TOTAL \$1.24 MILLION**

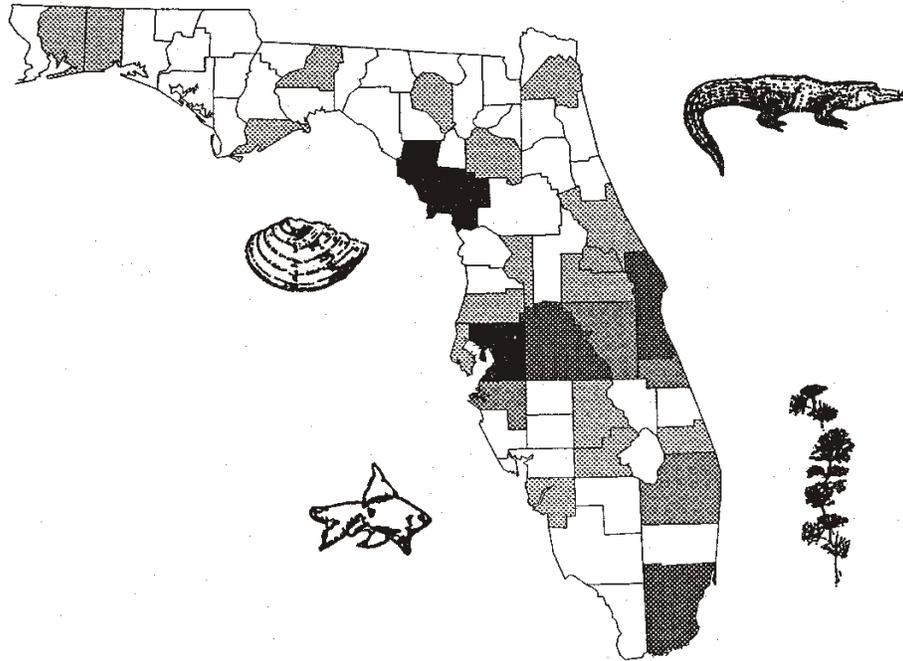
During 1993, sales of other aquatics totaled \$1.24 million, down from \$1.43 million in 1991. Other aquatics include crawfish, fresh water shrimp, eels and other minor aquatics. Production came from 80 acres of water surface used by 13 growers. There are two new growers expecting to produce some of the above mentioned items in 1994 or later.

**CATFISH, ALLIGATORS, OYSTERS, CLAMS,  
AND OTHER AQUATICS, FLORIDA, 1993**

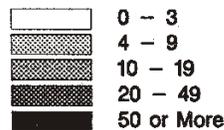
Specie	Number of growers	Water surface		Value of sales 1993
		1993	1994 1/	
Catfish:	Number	Acres		1,000
Food	34	1,251	1,251	349
Other	9	36	37	203
Total	37 2/	1,287	1,288	552
Alligators:				
Hides	--	--	--	3,252
Meats	--	--	--	1,180
Total	38	320	315	4,432
Oysters	18	421	412	974
Clams	173 3/	937	958	3,662
Sport/Game fish	13	133	135	1,227
Tilapia	19	3,127	3,128	1,037
Other Aquatics	13	80	80	1,235
Total	269 4/	6,305	6,316	13,119

1/ Includes area only for active growers in 1993. 2/ Total reflects some growers with both food type and other. 3/ Total reflects recent graduates of "Project OCEAN" at Cedar Key who had sales in 1993. 4/ Total reflects some growers with more than one specie.

## ACTIVE AQUACULTURE PRODUCERS Florida, 1993



Number of Producers



**Total: 523**

### RACEWAY AND TANK CULTURE

Water volume for the 58 producers reporting raceway and or tank culture for 1993 totaled 5.9 million gallons with a daily exchange rate of 47 percent.

### AQUACULTURE LABOR

Florida aquaculture operators reported working an average of 39 hours per week on their operations during 1993. This compares with 40 hours per week for 1991. Operators in Hillsborough, the leading county with a heavy concentration of tropical fish, averaged 52 hours per week compared with 51 hours per week for 1991. Brevard County, with a heavy concentration of clam producers averaged 25 hours during 1993 compared with an average of 22 hours in 1991.

Aquacultural producers employed 964 full-time workers and 292 part-time workers in 1993. This was up from 884 full-time workers and 235 part-time workers in 1991. In addition, there were 341 unpaid workers, primarily family members, reported in the survey. This compares with 262 unpaid workers reported in the survey for 1991.

### AQUACULTURE LABOR REQUIREMENTS, FLORIDA, 1993

State	Number of farms and workers					
	Unpaid		Paid full time		Paid part time	
	Farms	Workers	Farms	Workers	Farms	Workers
Total	164	341	158	964	110	292