

POSSIBILITIES FOR COMMERCIAL PRODUCTION OF FOOD FISH IN THE SOUTHEAST

VERNE E. DAVISON, Southeastern Biologist, Soil Conservation Service, Auburn, Alabama

Proc. Annu. Conf. Southeast. Assoc. Game & Fish Comm. 8:330-332

The possibilities in American food-fish farming are related primarily to suitable soils and available water. Where waters, soils and topography are favorable, a demand for profitable fish culture and markets will arise. We are encountering a healthy desire on the part of pond owners for food-fish management, particularly in Soil Conservation Districts where programs for better land and water use and conservation continue to expand and mature.

In poultry-raising sections, the waste products of the boiler industry are offered as a feed resource to use in producing marketable fish. In the rice-growing sections, the possibilities and the interest in fish farming are very extensive. Puerto Rico and the Virgin Islands need to grow more animal proteins for home consumption. Throughout the Southeast are many pond owners and land owners who believe food-fish production should be a profitable way to supplement their income from irrigation ponds, fishponds, and livestock waters.

Let's look at the rice acreage for an indication of the scope of the opportunity. All riceland soil is suitable for fish production and has an available water supply.

<u>Location</u>	<u>Rice acreage (AC)</u>	<u>Year</u>
U.S.A.	2,000,000	1952
Southeastern	1,200,000	1952
Louisiana	510,000	1952
Arkansas	480,000	1952
Mississippi	52,000	1952

Rice production of 2,000 pounds per acre at 5¢ a pound yields \$100.00 per acre, and rice crops are grown 2 years out of 4. Rice economy requires a rotation system of cropping. Often, cattle are pastured the 2 years between rice crops. Flooding may be an effective alternate, particularly (1) if it destroys the grasses and weeds that compete with rice and (2) if fish production becomes profitable. At least one soil type suitable for rice is not suitable for pasture grasses. This soil and others may be satisfactory for fish production with or without rotations with rice.

The acreage of soils suitable for rice production and fish management is more than double the present rice acreage in Arkansas, Louisiana, and Mississippi. Similar heavy soils occur in Alabama, Georgia, Florida, South Carolina, North Carolina, and Texas.

Commercial production of food-fish is not being practiced successfully yet in the Southeast. There are now a widespread interest and inquiry, a limited demand for technical help (perhaps involving 4,000 to 20,000 acres), and about 50 landowners who have land diked and ready for fish-culture. A dozen or more are

currently trying to grow an agricultural crop of fish for sale to the markets, but the yields and the markets are uncertain.

The fish farmer faces serious problems which must be solved with reasonable certainty before commercial food-fish production can be called a "successful culture." The production technology must be developed in all its practical details to answer the following problems:

1. Productivity in pounds per acre must be determined for each species of fish desired. This determination must be made for ponds (1) having only the natural fertility of the soil and water, (2) having the added fertility of rice stubble, (3) where fertility is increased with commercial fertilizer (8-8-2 or similar analysis) and (4) where supplementary feeding is practiced.
2. Control or prevention of water weeds must prevent interference with fish production and subsequent rice crops.
3. Wild fish must be avoided or controlled to prevent serious competition for food.
4. Spawning by the food-fish must be controlled or prevented.
5. A dependable supply of fingerling food-fish must be available at least once each year, and preferably during all the months from March to November.
6. Markets must be developed for quality pond-fish of sizes profitable to produce.
7. Dependable supplies must be available nearly every week of the year to satisfy a dependable market for pond-raised fish.
8. Law and regulations need to be amended appropriately to govern the disposal of game fish which occur in commercial ponds either by accident or as needed to control fry and fingerlings.

The most promising species of food-fish for immediate trial is bigmouth buffalo. Its wholesale price of 14 to 24 cents per pound should be profitable, and a supply of fingerlings can be produced in pond hatcheries.

Three species of catfish — flathead, channel and speckled bullhead — can be expected to bring as high or higher prices. They deserve trial as soon as possible. The speckled bullhead could be produced in extensive numbers for stocking in the next year or two. Hatchery techniques must be found or improved before large quantities of channel and flathead catfish can be made available.

The market price of common carp appears too low for profitable fish farming. It is the easiest food-fish to grow, we know most about its production, and fingerlings can be grown for stocking any time from March to November.

The improved mirror carp holds promise as a profitable market fish. It can be made available quickly from current introductions. Its ready acceptance in Jewish and Chinese centers should assure sufficient demand for 2 or 3 years. An enlarged market can be developed, if necessary, by a constant campaign to overcome the unfair prejudices against carp.

It may surprise a lot of people to learn that hundreds of thousands of Americans are not prejudiced food-wise against buffaloes, catfish and carp. The term food-fish is more appropriate than "rough fish" or coarse fish," which is used commonly in reference to them. Contrary to general opinion, the carp, catfish and buffalo fishes are wholesome foods and not the tasteless, low grade food so oft implied. They meet our American standards of food in flavor, nutrition and attractive appearance for the table.

To summarize the possibilities for commercial production of food-fish: A vast acreage of pond waters is suitable for food-fish production in our expanding agricultural economy. The techniques are not well developed. Comparative yields are not known for the most promising species of fish. Supplies of fingerlings for stocking are not available yet. Markets are not yet geared to pond-fish supplies. Nevertheless, food-fish farming is a promising culture, we are well into its beginning, and we shall see considerable development in many Soil Conservation Districts.