



Should You Attempt Fish Farming? Considerations for Prospective Fish Growers

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Authors: Louis A. Helfrich, Fisheries Extension Specialist, and George S. Libey, Associate Professor, Aquaculture; Department of Fisheries and Wildlife Sciences, Virginia Tech

Introduction

Fish farming is an ancient practice that can provide many profitable opportunities today. The raising and selling of fish on a commercial basis has proven to be economically successful throughout the United States. In Virginia, fish farming is growing in popularity. Increasing recognition that fish is a healthy food, low in calories and cholesterol levels, but rich in protein has increased consumer demand in both restaurants and supermarkets. Consumption of fish products is increasing dramatically and now averages about 14 pounds/person/year in Virginia.

Fish are excellent animals to rear. They can convert feed into body tissue more efficiently than most farm animals, transforming about 70 percent of their feed into flesh. Fish also have excellent dress-out qualities, providing an average of 60 percent body weight as marketable product and a greater proportion of edible, lean tissue than most livestock. Fish can be intensively cultured in relatively small amounts of water. In Virginia, they can be farmed at densities near 2,000 pounds/acre with careful management. Farm-reared fish offer a new alternative agricultural crop that can potentially replace those which are declining in popularity or profitability. Healthy farm-reared fish, guaranteed free of diseases, pesticides, and other harmful toxicants, are a more desirable substitute for wild fish from potentially polluted waters.

Fish farming is, like most other types of farming, a risky business that requires special knowledge, skills, and careful considerations. Some of the most important factors to consider in determining whether you should begin a fish farming business are listed

below. Answering yes to all or most questions does not insure success. Similarly, answering no to all or most questions does not guarantee failure. Individuals with little or no experience in fish farming and few resources available can become successful fish farmers, but they should start small and expand slowly, and be willing to invest lots of time and effort.

Answer Yes or No

Economics:

1. Do you have sufficient financial resources available?
2. Do you own suitable land with a good source of high-quality water?
3. Do you own enough land and water necessary for a profitable venture?
4. Is there a high demand and sufficient market for your product?
5. Do you have the equipment and machinery necessary?
6. Is expected profit from fish farming greater than other land uses?
7. Can you really devote the money, time, and labor necessary?
8. Do you know the costs involved with the following items:

Capital Costs

Land & buildings
Building ponds/raceways
Trucks & tractors
Plumbing & pipes
Tanks & aerators
Oxygen meters
Nets & boots

Operating Costs

Purchasing eggs/fingerlings
Fish feed
Electricity & fuel
Labor & maintenance
Chemicals & drugs
Taxes & insurance
Telephone & transportation

Marketing:

1. Is there an established market for your fish?
2. Is the market demand sufficient year-round?
3. Do you have an alternative marketing strategy to rely on?

Physical:

1. Do you have a continuous source of clean, high-quality water?
2. Does your soil have enough clay content to hold water?

3. Is the water temperature optimal for the fish species reared?
4. Do you have space sufficient to build enough ponds or raceways?
5. Do you have good and easy pond access for feeding and harvesting?
6. Are the pipes sufficient in size for quick draining & easy filling?
7. Is your residence near enough for direct observation and security?

Production:

1. Have you had your water tested (chemical and bacteriological)?
2. Do you have a reliable source of fingerlings or eggs at affordable prices?
3. Do you have a reliable source of feed at reasonable cost?
4. Do you have dependable labor available at affordable wages?
5. How long is your growing season (days/year)?
6. What's your production capacity (pounds/year)?
7. What's the best fish species for you to grow?
8. Are you aware of fish reproductive biology and nutritional needs?

Legal:

1. Are you aware of the federal and state laws about fish farming?
2. Do you know where to apply for the necessary permits and licenses?
3. Are you familiar with the personal liability concerns involved?

Risk Assessment:

1. Can you afford to lose your entire fish crop?
2. Can you conduct water quality tests?
3. Is fish-disease diagnostic-help readily available?
4. Do you know about off-flavor and its causes?
5. Is pesticide, metal, or oil contamination possible?
6. Can you deal with poachers and vandals?
7. Do you know where to go for information and help?

Fish Farming Publications

Magazines/ Newsletters

Aquaculture Digest
9434 Kearney Mesa Rd.
San Diego, CA 92126
Monthly--\$50/yr.

Aquaculture Magazine
P.O. Box 2329
Asheville, NC 28802
Bimonthly--\$15/yr.

Aquafarm Letter
3400 Neyrey Drive
Metairie, LA 70002
Bi-weekly--\$70/yr.

Arkansas Aquafarming
University of Arkansas
Cooperative Extension Service
Box 391
Little Rock, AR 72203
Quarterly--Free

California Aquaculture
University of California
Cooperative Extension Service
Aquaculture Extension
Davis, CA 95616
Monthly--Free

Canadian Aquaculture
4652 William Head Rd.
Victoria, British Columbia
Canada, V8X3W9
Quarterly--\$14/yr.

Carolina Aquaculture News
P.O. Box 1294
Garner, NC 27529
Bimonthly--\$12/yr.

Farm Pond Harvest
Professional Sportsman Pub.Co.
Box AA
Momence, Illinois 60954
Bimonthly-\$10/yr.

Fish Farmer
Business Press International
205 E. 42nd St.
New York, NY 10017
Bimonthly-\$56/yr.

Fish Farming International
Heighway House
87 Blackfriars Road
London SE 1814B England

Monthly--\$35/yr.

Fish Farming International
110 Fleet St.
London EC4A England

For Fish Farmers
Mississippi State University
Cooperative Extension Service
Mississippi State, MS 39762
Monthly--Free

Georgia Fish Farmer
University of Georgia
Cooperative Extension Service
Athens, GA 30602
Quarterly--Free

Salmonid Magazine
U.S. Trout Farming Asso.
506 Ferry St.
Little Rock, AR 72203
Quarterly--Free

South Carolina Aquaculturist
Clemson University
Cooperative Extension Service
Room 102, Long Hall
Clemson, SC 29631
Quarterly--Free

Texas Aquaculture
Texas A&M University
Cooperative Extension Service
102 Nagle Hall
College Station, TX 77843
Quarterly--Free

The Catfish Journal
Catfish Farmers of America
P.O. Box 1700
Clinton, MS 39056
Monthly--\$20/yr.

Timely Tips-Fisheries

University of Tennessee
Cooperative Extension Service
P.O. Box 1071
Knoxville, TN 37901-1071
Quarterly--Free

Water Farming Journal
3400 Neyrey Drive
Metairie, LA 70002
Monthly--\$15/yr.

World Aquaculture News
P.O. Box 150129
Arlington, TX 76015
Monthly--\$20/yr.

Journals/ Technical Publications

Aquaculture
American Elsevier Scientific Pub. Co.
52 Vanderbilt Ave.
New York, NY 10017
32 issues/yr.--\$640/yr.

Aquaculture Engineering
Elsevier Applied Science
52 Vanderbilt Avenue
New York, NY 10017
Monthly--\$132/yr.

Journal of Shellfish Research
National Shellfisheries Association
Oyster Biology Section
Gulf Coast Research Lab.
Ocean Springs, MS 39564

Journal of the World Aquaculture Society
178 Pleasant Hill
Louisiana State University
Baton Rouge, LA 70803

Progressive Fish Culturist
American Fisheries Society
5410 Grosvenor Lane, Suite 110
Bethesda, MD 20814-2199

Quarterly--\$16/yr.

Transactions of the American Fisheries Society
American Fisheries Society
5410 Grosvenor Lane, Suite 110
Bethesda, MD 20814

Selected Fish Farming Books

A Guide to Integrated Warm Water Aquaculture. D. Little and J. Muir. Institute of Aquaculture, University of Stirling, Stirling FK9 4LA, Scotland.

Aquaculture Engineering. 1977. F.E. Wheaton. R.E. Krieger Publishing Company, Kreiger Dr., Malabar, FL 32950.

Aquaculture: The farming and husbandry of freshwater and marine organisms. 1972. John Wiley & Sons, Inc. New York, NY.

Cage Aquaculture. 1987. M. Beveridge. Unipub, 4611-F Assembly Drive, Landham, MD 20706-4391. Phone (301) 459-7666. (\$38)

Commercial Catfish Farming. 1973. Interstate Printers and Publishers. Danville, IL.

Crustacean and Mollusk Aquaculture in the United States. J.V. Huner and E.E. Brown. AVI Publishing Co., Inc., 250 Post Road East, P.O. Box 831, Westport, CT 06881.

Fish Farming Handbook. 1980. AVI Publishing Co., Inc., Westport, Ct. 06881.

Fish Hatchery Management. 1986. American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, MD 20814.

Guidelines for Striped Bass Culture. 1976. American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, MD 20814-2199.

Principles and Practices of Pond Aquaculture. 1986. American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, MD 20814-2199, Phone (301) 897-8616. (\$39.95)

Principles of Warmwater Aquaculture. 1979. John Wiley & Sons, Inc. New York, NY.

Principles of Warmwater Aquaculture. 1979. American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, MD 20814-2199. Phone (301) 897-8616 (\$39.95)

Recent Advances in Aquaculture. J. Muir and R. Roberts. Westview Press Inc., 5500 Central Ave., Boulder, CO 80301.

The Aquaculture of Striped Bass. 1984. Maryland Sea Grant Program, 1224 Patterson Hall, Univ. of Maryland, College Park, MD 20742.

Trout and Salmon Culture (Hatchery Methods). 1980. California Fish Bulletin Number 164. University of California, Berkeley, CA 94720.

Trout Farming Handbook. 1973. Scholtum International Inc. Flushing, NY.

Water Quality in Warmwater Fish Ponds. 1984. C.E. Boyd. Auburn University, Auburn, AL 36830. (\$8)

Organizations

American Fisheries Society
5410 Grosvenor Lane
Suite 110
Bethesda, MD 20814-2199
301-897-8616

Catfish Farmers of America
P.O. Box 36
Jackson, MS 39205
601-353-7916

National Ornamental Goldfish Growers Asso.
6916 Blacks Mill Rd.
Thurmont, MD 21788
301-272-7475

National Shellfisheries Association
Edwin Thodes
National Marine Fisheries Service
212 Rogers Ave.
Milford CT 06460
203-783-4200

Shellfish Institute of North America
National Fisheries Institute
2000 M Street, NW, Suite 580
Washington, DC 20036
202-296-5170

U.S. Trout Farmers Association

515 Rock Street
Little Rock, AR 72202
501-372-3595

World Aquaculture Society
341 Pleasant Hall
Baton Rouge, LA 70803
504-388-3137
