



Is Aquaculture For You?

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Development

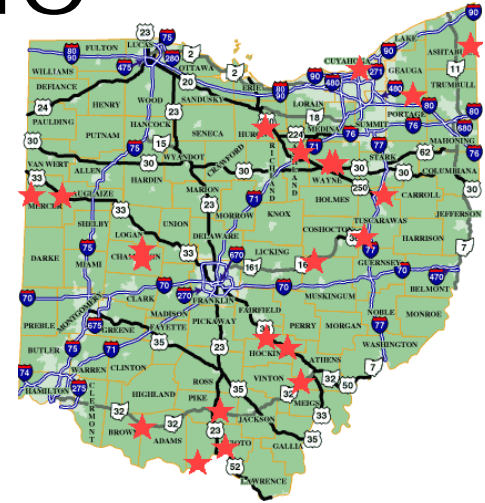
OSU South Centers

Piketon, OH



Aquaculture in Ohio

- The 1998 Census of Aquaculture
 - 33 fish farms in Ohio
 - \$1,788,000 in total sales
- 2005 Census of Aquaculture
 - 55 fish farms
 - sales of over 3.2
- number of fish farms in Ohio increased at a rate of 30% per year
- total aquaculture sales increased at a rate of 17% per year
- aquaculture ranked 15th in Ohio for value of agriculture products sold





Most farms are small

- 75% Farms are family operations
- 87% Not primary source of income
- 37% Food fish, 34% game fish, 21% fingerlings
- 66% ponds, 43% tanks, 13% cages
- YP 35%, RT 33%, LMB 29%, BG 29%, CCF 24%, Minnows 19%
- 57% market to pond owners, 32% direct retail



Rules and Regulations

- **Aquaculture is a form of agriculture in Ohio**
 - Ohio Revised Code 1.61. "Agriculture" defined.
- **Aquaculture permits in Ohio**
 - Ohio Department of Natural Resources
 - Fee: \$50.00 - \$100.00 annually
 - <http://www.dnr.ohio.gov/wildlife/Fishing/aquaculture/aquaculture.htm>
- **Fish Importation into Ohio**
 - Aquatic fish health is regulated by the Ohio Department of Agriculture
 - <http://www.ohioagriculture.gov/addl/import.pdf>
- **Storm Water Discharge permits – Notice of Intent (NOI)**
 - Ohio EPA
 - Fee: \$200.00 - \$500.00
 - those construction activities (including pond building) involving 1 or more acres of land disturbance.
 - http://www.epa.state.oh.us/dsw/permits/CGP_renewal_final_s.pdf
- **National Pollutant Discharge Elimination System (NPDES) permits**
 - Ohio EPA
 - applies to commercial (for profit) and non-commercial facilities that produce, hold or contain 100,000 pounds or more of aquatic animals per year....“
 - <http://www.epa.state.oh.us/dsw/permits/NPDESForm2B.pdf>
- **Water Withdrawal Facilities Registration**
 - Ohio Department of Natural Resources
 - > 100,000 gallons/day
 - <http://www.dnr.state.oh.us/water/wwfr/forms.htm>



Reality Check

- Our enterprise budgets show that there is little profit to be made simply growing fish for food.
- You must think about becoming vertically integrated (hatching to marketing)
- You must think about adding value
 - Niche markets
 - Processing
 - Agritainment
 - High value species





Economic Considerations

- Do you have a business plan?
- Do you own property that is suitable?
- Capital
 - Facility construction
 - Equipment costs
 - Labor
 - Insurance
 - The unexpected



Economic Considerations

- Does your lender understand aquaculture?
- Can you wait 12-18 months for first crop?
- Can you wait five years to make a profit?
- Is profit higher than other investments?



Personal Considerations

- **Work long, hard, irregular hours?**
- **Good with people? (clients, labor)**
- **Good with math?**
- **Good with carpentry, plumbing, electric?**
- **Good at learning new things?**
- **Good at asking for help?**
- **Internet savvy?**



Marketing Considerations

- Have you assessed the market?
 - Year round or seasonal
 - More than one?
- Can you compete?
- Will your product be processed?
- Product transportation, holding?
- Legal issues regarding marketing?



Site Considerations

- Site restrictions
 - Zoning & Wetlands
 - Year round access, large truck access
- Expansion
- Biosecurity
 - Humans, birds, disease
- Water
 - Volume, Quality, Conservation & Control
- Waste management
- Dependable utilities (back up system)



Socio-legal considerations

- Neighbor relations
- State agencies
 - ODNR, DOAg, OEPA, OSUE, Sea Grant
- Permits
- Laws



Production Considerations

- **Species selection (biology, market)**
- **Production technologies (pond, indoor)**
- **Sources**
 - Fish, fingerlings, feed, chemicals, equipment, information, advice.
- **Disease diagnostics**
- **Dependable labor**



Is there money available?

- Are their grants available???
 - Some, but most go to existing fish farmers
 - SARE www.sare.org
 - Tobacco farmers
- Loans
 - Farm Service Agency
 - www.fsa.usda.gov
 - Family Farm Loan Guarantee
 - Ohio Dept. Agriculture/Dev.
 - 800-282-1955
 - <http://www.state.oh.us/agr/guidelines.htm>
- Most banks don't understand aquaculture



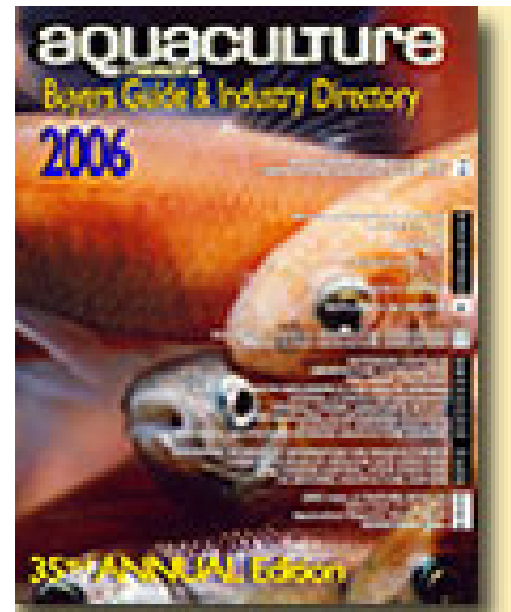
Resources

- Websites
 - www.aquanic.org
 - world's greatest aquaculture site!
 - Really deep!
 - Links to many other websites
 - <http://southcenters.osu.edu>
 - aqua-ohio list serve
 - yellow perch list serve
 - Shrimp list serve



Resources

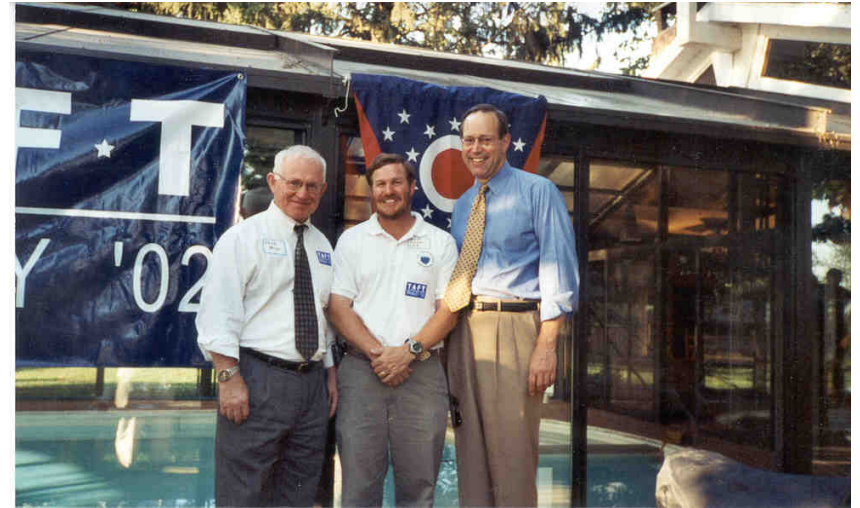
- **Newspaper**
 - **Fish Farming News**
 - <http://www.fish-news.com/ffn.htm>
 - 1-800-989-5253
- **Magazine**
 - **Aquaculture Magazine**
 - Buyer's guide
 - www.aquaculturemag.com
 - 828-254-7334





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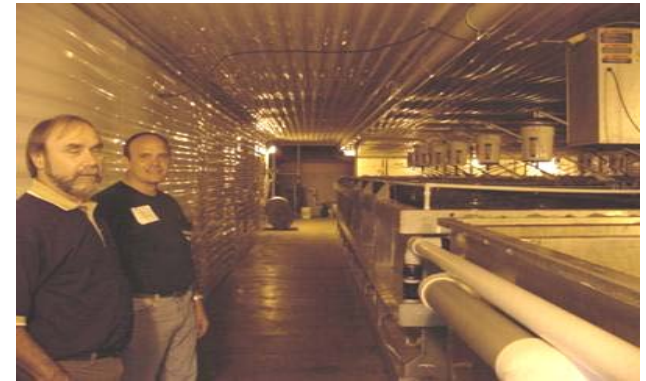
- Associations
 - Join the OAA!
 - NAA
 - Access to leaders in the industry
 - Networking
 - Impact
 - Control of your industry





Case Study: Tom & John

- Former Hog Farmers
- Indoor Recirculation
- 2 Brothers
- Design & Sell systems
- Raise fish
- Buy fish
- Value add
- Possible Retail





"Bringing Knowledge to Life"



We are here to help!





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