

Module 5 Site Selection, Facility design & Systems Selection

Objective: The purpose of this consolidated worksheet is to guide you through the most important considerations before you to start up your aquaculture business. Besides the technical considerations on site selection, facility design and system selection, it is vital to know what type of permits you need to have to properly operate your business. The following worksheet includes both technical aspects and the aquaculture permits in Ohio.

Analyze Water Source

Water Analysis Inventory

1. Are there large volumes of high-quality water?
Yes ___ No ___
2. What is your water source?
 - Springs
 - Well How deep? _____
 - River, stream, or river
 - Surface runoff
 - Ground water
 - Municipal
3. What is the volume of flowing water available in gallons per minute? _____
4. Do you know these water chemistry parameters for your source? Yes ___ No ___

If yes, indicate the values and any known fluctuations?

- Hardness:

- Alkalinity:

- pH:

- Dissolved oxygen:

- Temperature range:

- Iron or mineral content:

- Turbidity or clarity analysis:

Color (e.g. Green, light brown, dark brown, etc.)

Salinity:

Survey land topography

Test Soil Profiles

Land and Physical Parameters Inventory

Where do you plan to culture your species? Check one or more)

- Ponds (go to "A" of existing, "B" if ponds must be constructed)
- Raceways or Flow-through systems (go to "C")
- Closed systems:
 - Indoors
 - Outdoors (go to "D")
- Undecided

A. For existing ponds:

1. How old is the pond? _____
2. Is the pond
 - Natural or
 - Constructed?
3. What shape and how large is the pond?
 - Round
 - Oblong
 - Square
 - Rectangular
 - Irregular

Surface acres or dimensions: _____

Maximum depth _____

Average depth _____

4. Is the pond drainable?
Yes ___ No ___
5. Are there any tree stumps in the pond?
Yes ___ No ___
6. Are there any deep holes in the pond?
Yes ___ No ___
7. Do you plan to use
 - Cages or
 - Small net pens?
8. Does the pond freeze during the winter?
Yes ___ No ___
9. What is the present use of the pond? (Irrigation, recreation, etc.)

10. Does the pond have an outflow?

Yes ___ No ___

Into what? _____

11. Is there any known or suspected runoff into the pond from agricultural fertilizers or pesticides, septic leakage, roads, livestock feedlots, garbage dumps, etc.?

Yes ___ No ___

If yes, indicate what _____

12. Has the pond ever purposely been treated with fertilizers, chemicals, or lime? Yes ___

No ___

13. Does the pond lose much water through evaporation during summer?

Yes ___ No ___

14. What aquatic species are in the pond now?

15. Is the area subject to flooding? Yes ___ No ___

B. For ponds to be constructed:

1. Do you own the land? Yes ___ No ___

2. How much land is available?

3. Topography – flat, sloped, wooded, etc.

4. Is the proposed culture site an unrestricted are (e.g. not a right-of-way or wetland)?

Yes ___ No ___

5. Is the site proposed to flooding or in a flood plain? Yes ___ No ___

6. What is the soil type? _____

7. pH _____

8. Have pesticides been used in the area?

Yes ___ No ___

C. For flow-through raceways:

1. Is the water flow constant year round?

Yes ___ No ___

2. What is the yearly water temperature range? _____

D. For closed systems:

1. Is it your design?

Yes ___ No ___

If yes, have your tried it on a small scale? Yes ___ No ___

2. Is it a purchased system?

Yes ___ No ___

If yes, have you seen other systems form this supplier in operation? Yes ___ No ___

Assess site infrastructure (e.g. roads, utilities)

Inspect Existing Structures

Assess Site Infrastructure Inventory

1. Is electricity available at the site?

Yes ___ No ___

Voltage and phase? _____

2. Are there roads or all weather access to the area? Yes ___ No ___

3. What is your kilowatt/hour charge for electric in your area?

Kilowatt/hour: \$ _____

4. What existing infrastructures would require relocation?

- Utilities
- Pipelines
- Roads
- Residences

5. Site accessibility: Identify

Paved roads: identify (e.g. US32) _____

Unpaved roads:

6. Are your buildings sound?

- Well insulated?
- Moisture resistant?

Plan for Security

Security Inventory

1. Do you live close enough to the culture site to visit and monitor as needed, and to ensure security?

Yes ___ No ___

Biosecurity Inventory

1. What are the local and regional disease risks for the species that I am growing?

2. How is my operation vulnerable to disease?

3. What factors (e.g. health status of introduced animals, contaminated transport water, contaminated farm water source, etc.) might influence that status?

4. What is the current health status of animals on my farm?

Analyze Effluent Options

Effluent Analysis Inventory

1. Where would the effluent go? _____
2. Do you have an appropriate disposal plan for the uneaten food and fecal material? Yes ___ No ___
3. Can you effectively manage wastes produced by your operation? Yes ___ No ___

Conduct Labor Market Analysis

Labor market analysis inventory

1. Can your personal situation stand the extra stress of starting a new enterprise? Yes ___ No ___
2. Is dependable and knowledgeable labor force available in the area? Yes ___ No ___
3. Do you and/or your employees have the skills needed to make the proposed operation work? Consider management skills as well as mechanical and farming skills needed. Yes ___ No ___
4. Would you hire yourself to do the planning, management and day to day labor required? Be honest with yourself about your strengths and weaknesses. Yes ___ No ___
5. Are you willing to work long hard and irregular hours (e.g., 16 hours/day, 7 days/week)? Yes ___ No ___
6. Will you seek help when needed? Yes ___ No ___
7. Can you afford to hire an experienced technician? Yes ___ No ___

Investigate Community Perceptions

Community Perceptions Inventory

1. Have you anticipate any problems with neighbors?
Yes ___ No ___
2. Has this project been discussed with the town zoning office? Yes ___ No ___
If yes, what was the response?

3. Do you get along well and communicate effectively with people? (Small producers not only grow fish or shellfish, they must also promote and market themselves and their product.)
Yes ___ No ___
4. Will your neighbors and other user groups (e.g., recreational, commercial fisheries) accept the aquaculture operation (the operation will not interfere or be perceived to interfere with their interests)?
Yes ___ No ___
5. Have you discussed your planned operation with the appropriate state agency (ies) and your local Cooperative or Extension Educator?
Yes ___ No ___
6. Have you identified the permits required to construct and operate an aquaculture operation?
Yes ___ No ___

Aquaculture permits in Ohio.

1. What permits do I need?
 - Aquaculture?
 - Construction?
 - Water Withdrawal?
 - Effluent?
 - Zoning?
 - Processing?

Notes:
