



Best Management Practices for Aquaculture

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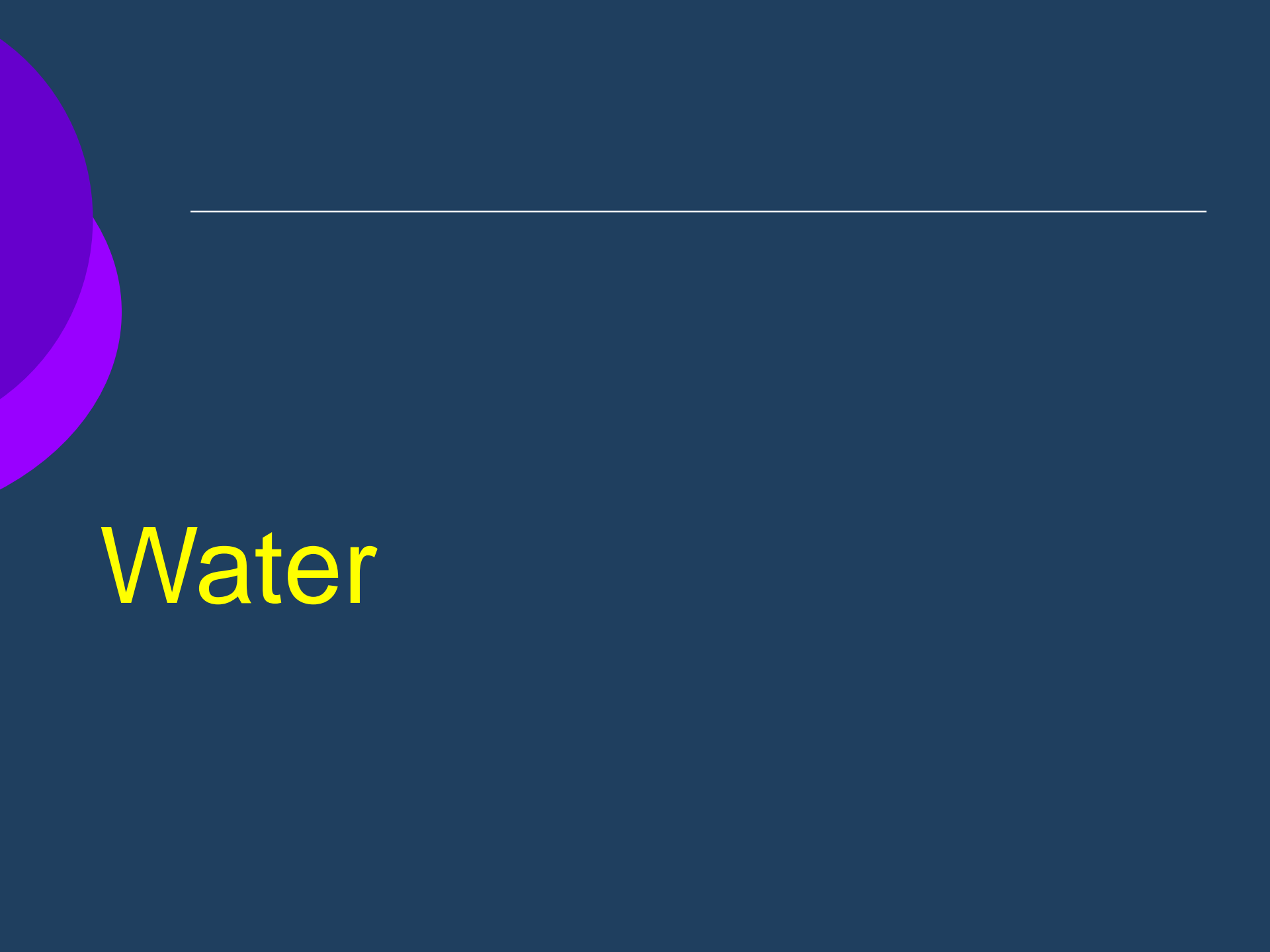
BMP Definition

Best **M**anagement **P**ractice

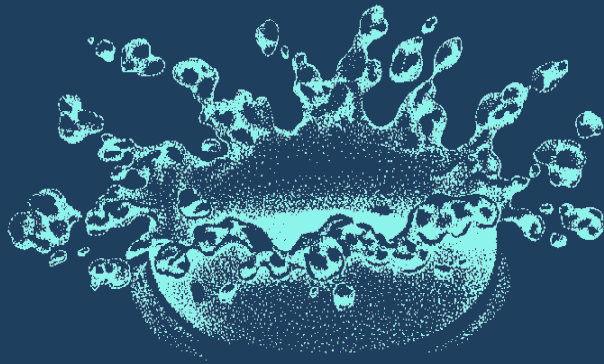
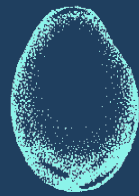
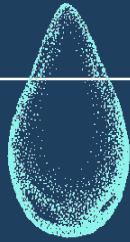
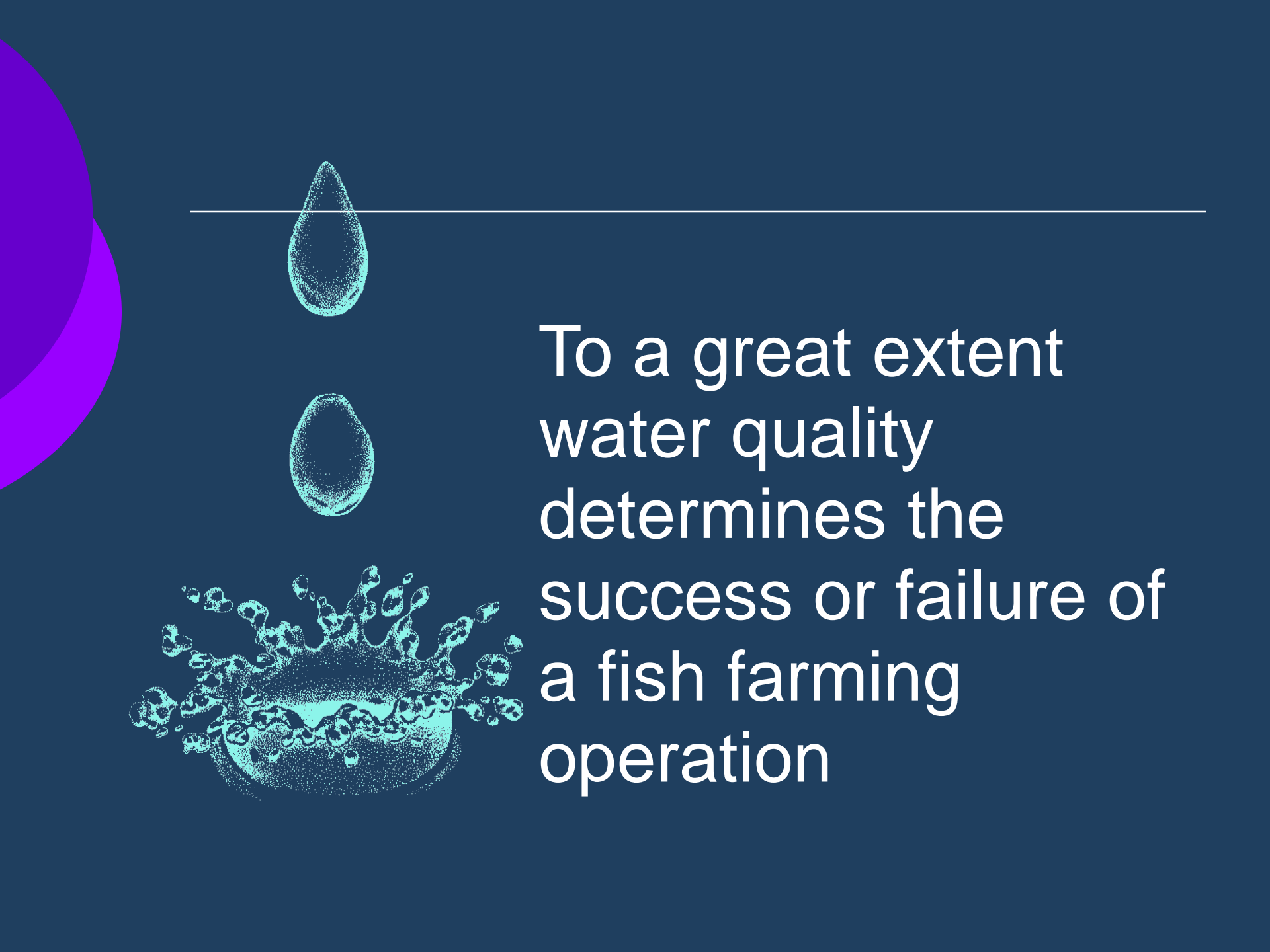
- Any program, procedural technique, method-of-operations, skills, measurement or device that maximizes health and well-being of cultured species, minimizes environmental effects, and promotes an efficient and economic aquaculture operation.

BMPs for Aquaculture

- Water
- Fish health
- Species selection
- Systems
 - Ponds
 - Recirculating
 - Cages
 - Raceways
- Feed management
- Markets

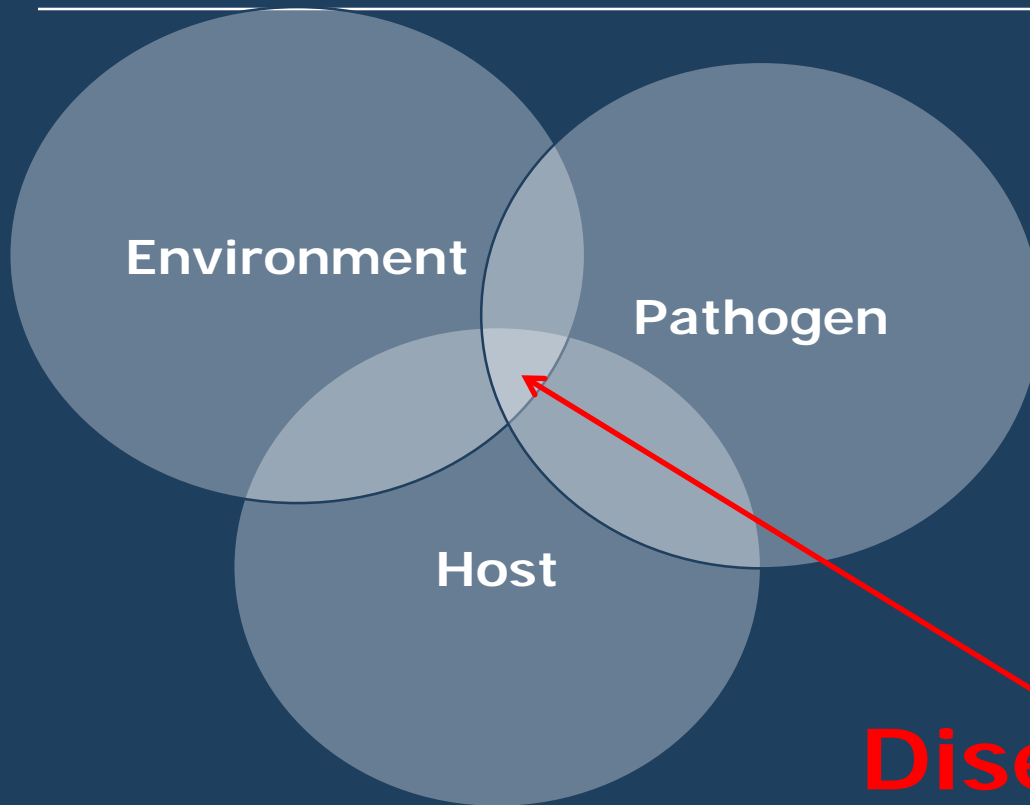


Water



To a great extent
water quality
determines the
success or failure of
a fish farming
operation

Fish Health



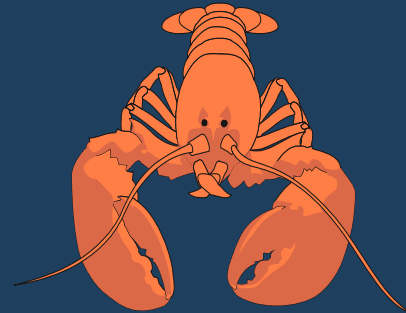
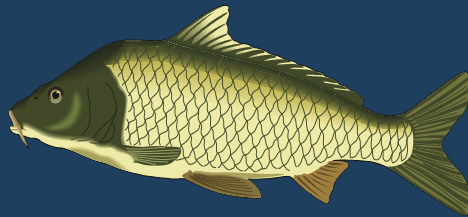
Disease Occurs



Species Selection

Selecting A Species

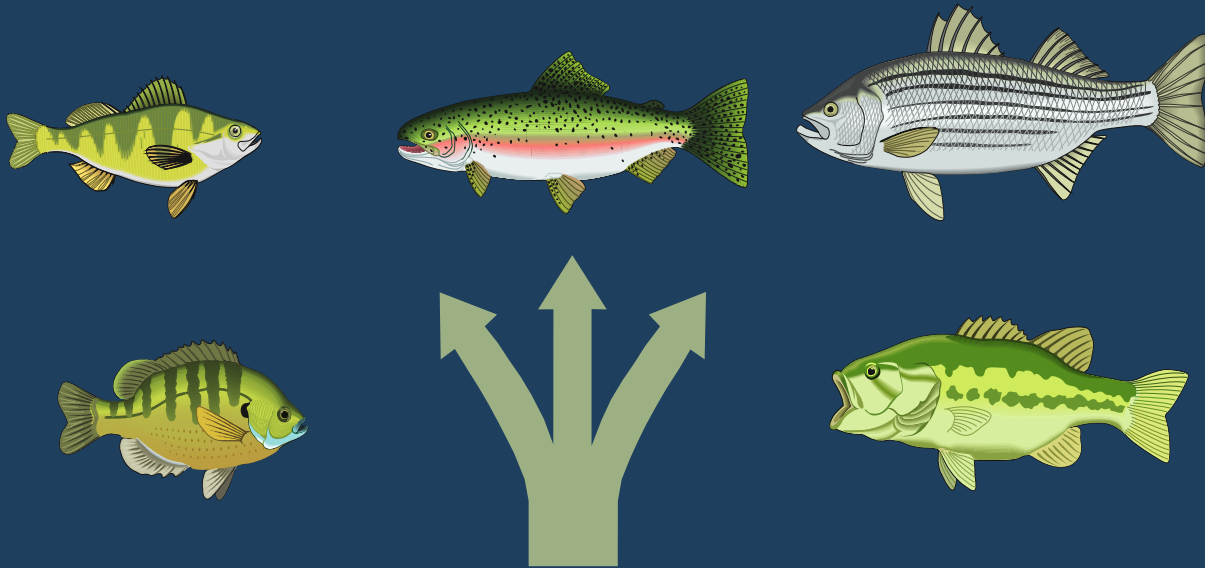
- Choose species with production information available.



Species Selection



Selection



If possible, provide variety

Ideal Culture Taxa Characteristics

- Grow rapidly to larger size
- Reach market size before reaching sexual maturity
- Readily accept a formulated diet
- Feed fairly low on the food chain
- Not cannibalistic
- Show uniform growth in size
- Readily reproduce

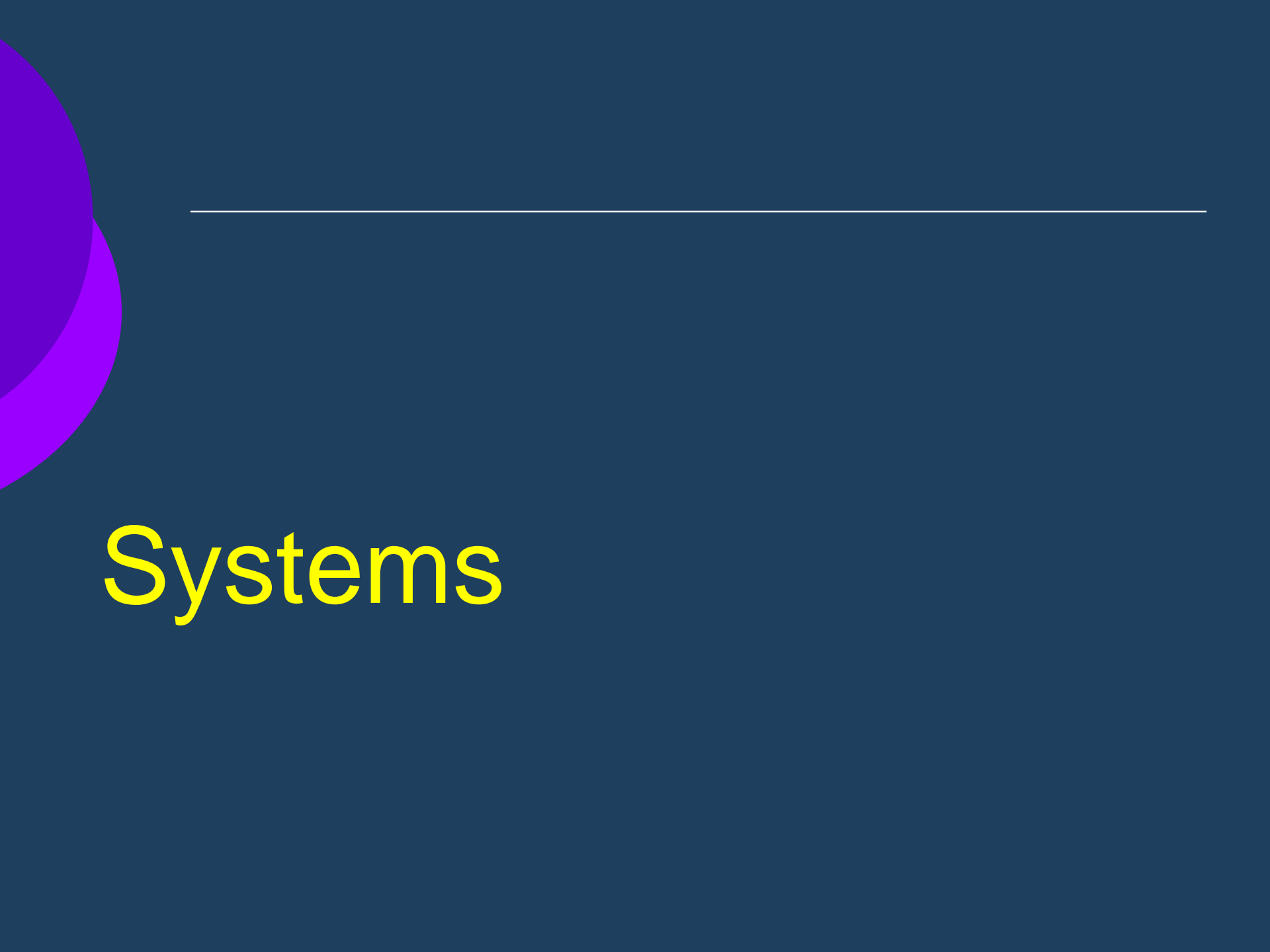


Ideal Culture Taxa Characteristics

- Produce large numbers of offspring
- Fairly disease resistant
- Handles well

Ideal Culture Taxa Characteristics

- Produce offspring large enough to accept pelleted feeds at first feeding
- Easily cultured under high rearing densities
- Tolerant of poor water quality
- Market value that exceeds production costs



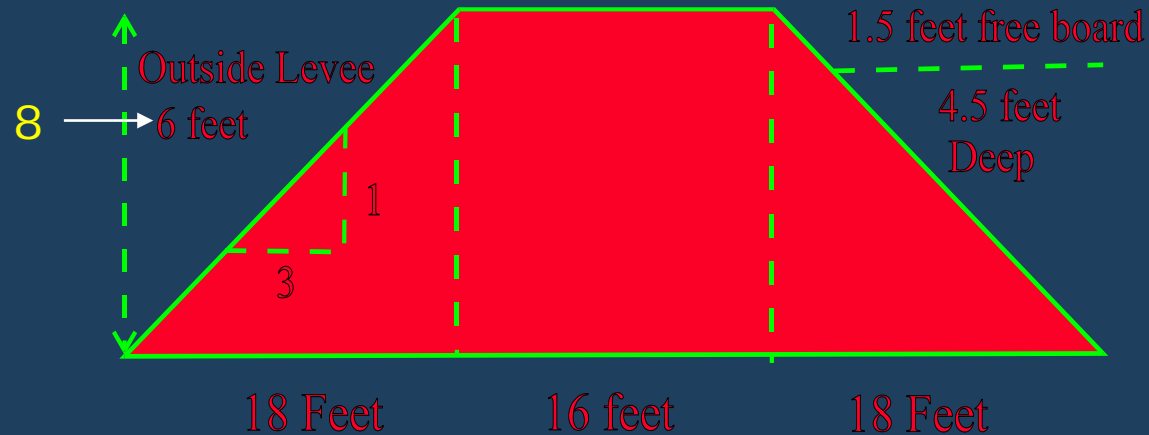
Systems

Levee pond construction

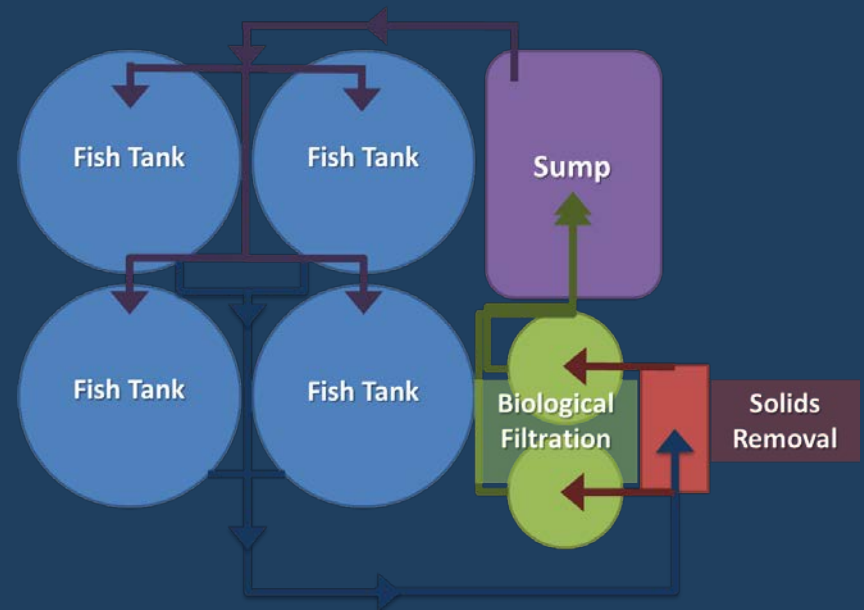
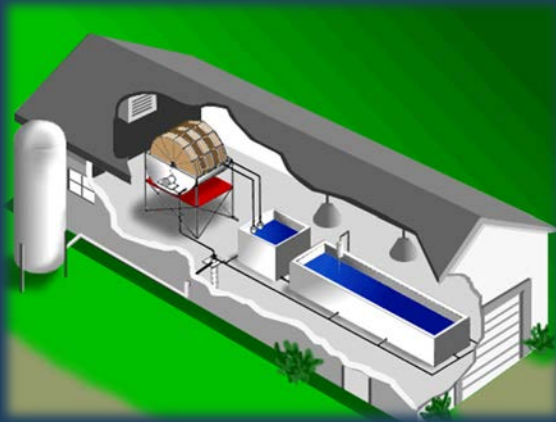
- Levee width
 - 20 ft for main
 - 16 ft for others
- Depth
 - 8 ft for overwinter
- All-weather access



Cross Section of Levee Pond

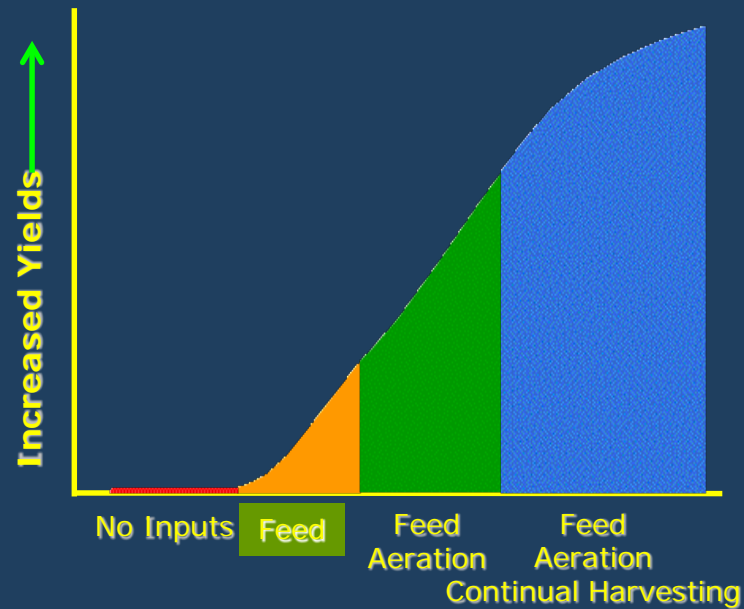


Recirculating Aquaculture Systems



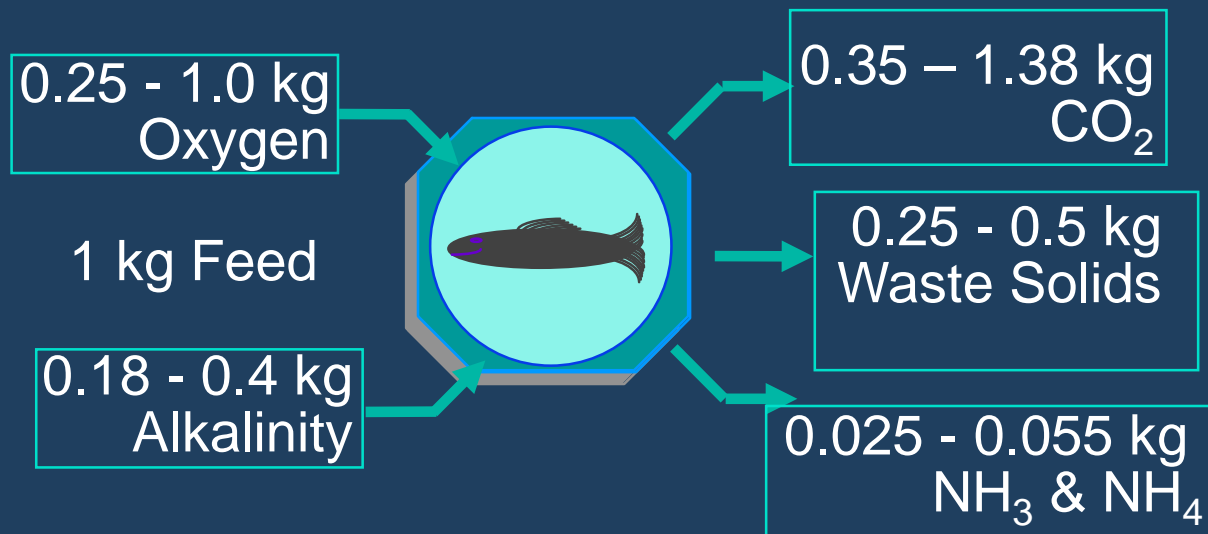
Production Rates

- Variables
 - Feed
 - Aeration
 - Stocking rate

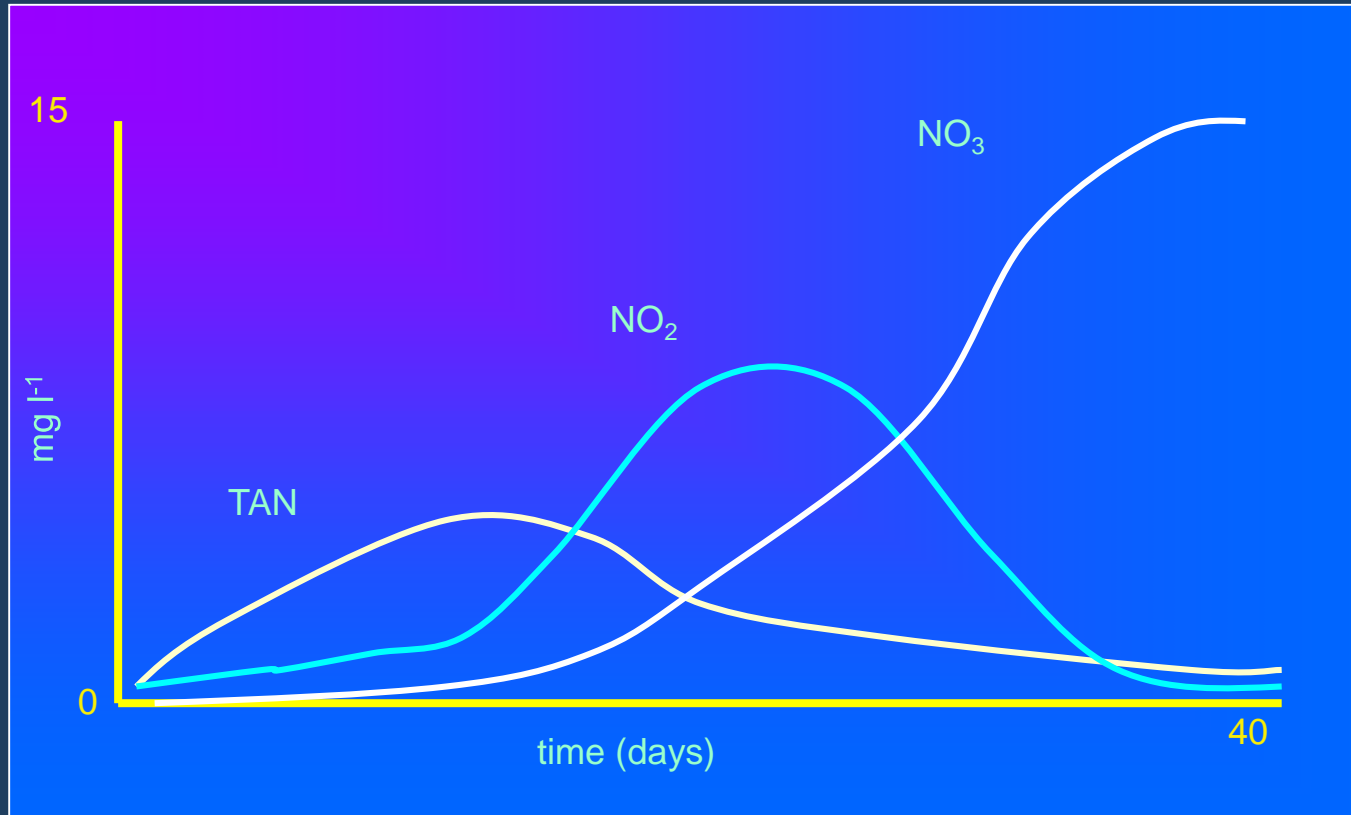


Ammonia Management

- Byproduct of protein digestion



Biofilter Timeline



Don't Be Impressed by Fish at High Densities.



Fish can be held at high density with low feed even in a poorly designed system

Instead

- Be impressed by how much feed can be used without harming water quality.
- Remember it takes feed to grow fish.

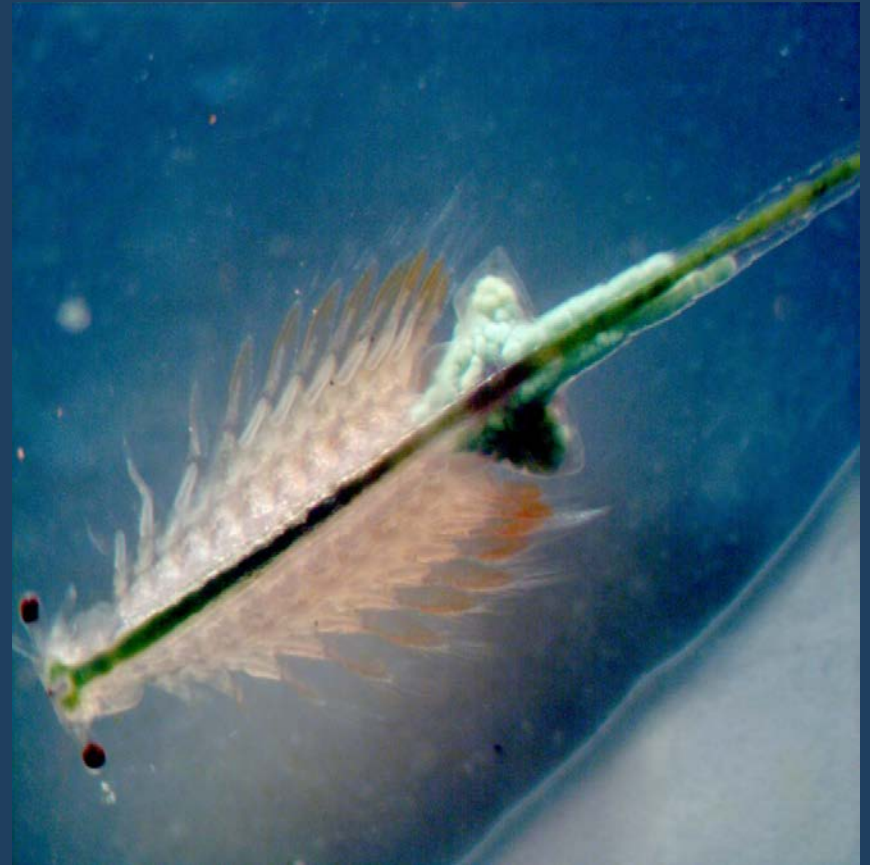
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Feed Management

Feeding Regime

- Continuum from extensive to intensive
 - Supplemental stimulation of food web
 - Formulated diets, supplemental vs. complete
- System specific, species specific and interaction of system and species

Feed training



Feeding

- Pellet size – Feed the smallest fish
- Frequency – Decreases as animals get older
 - larvae – constant supply of food
- Consistent
- Avoid excess food
 - Cost money
 - Expensive fertilizer
- Ad libitum, satiation or restricted feeding?

Storage

- Cool, dry
- Formulations affect storage – fish meal and oil
- Nutrient losses – fatty acids, vitamins
- Contamination – rodents, fungal, bacterial

Markets

Directory - Iowa MarketMaker - Mobile Preview

https://a.foodmarketmaker.com/search/directory?term=seafood&pos=[lat*%3A42.0307812%2C*lng*%3A-93.6319] | marketmaker

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-  **Coldwater Schools Cafeteria**
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-  **Snyder's Barbeque-Meat Market-Catering**
Big Rapids, MI [See Profile](#) [Get Directions](#)
-  **Off Route 32 Cafe**
Stewardson, IL [See Profile](#) [Get Directions](#)
-  **Shoup's Country Foods**
Frankfort, IN [See Profile](#) [Get Directions](#)

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Understanding the Marketing Climate

- Market Demand

- Location
- Demographics
 - Income
 - Education
 - Age
 - Culture
- Lifestyle
 - Increasing importance of value-added products
- Other animal products
 - Red meat industry
 - Chicken

Questions ?

