



## Power in Numbers: Exploring the Cooperative Model for Great Lakes Baitfish Producers

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From netting to casting a hook, baitfish play an integral role in the aquaculture industry and supply chain. The baitfish industry in the Great Lakes region, defined for the purposes of this analysis as Ohio, Indiana, Michigan, Illinois, and Wisconsin, is quite small when considered relative to other baitfish producing regions of the United States. According to the 2018 U.S. Department of Agriculture Census of Aquaculture, there were 32 producers in the five-state area currently producing baitfish as shown in Table 1 (National Agricultural Statistics Service, 2019, p. 35). Using an average in states with available data sales from baitfish production varied widely. In Ohio, producers averaged \$152,214 in sales per baitfish farm, while Wisconsin averaged \$291,142 farm and Michigan growers average \$66,750 per farm (National Agricultural Statistics Service, 2019, p. 35). However, multiple industry professionals have cautioned that because so many producers are operating at a very small scale in the region, it can be difficult to accurately capture data about the industry.



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States	Baitfish Farms 2018	Baitfish Farms 2013
Illinois	6	2
Indiana	1	1
Michigan	4	1
Ohio	14	16
Wisconsin	7	11
<b>Total</b>	<b>32</b>	<b>31</b>

Table 1: Number of baitfish producers in the Great Lakes region by state in 2013 and 2018. Data from U.S. Department of Agriculture 2018 Census of Aquaculture.

While any type of fish used to catch larger fish can be described as baitfish, the U.S. Department of Agriculture focuses on the following species in defining ‘baitfish,’ including crawfish, fathead minnows, shiners, golden shiners, goldfish, and suckers. In the Great Lakes region, fathead minnow and golden shiners are the most common species raised by producers farm (National Agricultural Statistics Service, 2019, p. 35). Because of the small number of baitfish producers in the region, many retailers selling live bait are supplied by producers from other states, particularly Arkansas.

### Why Explore the Cooperative Model for Baitfish Producers?



The North Central Regional Aquaculture Center NCRAC, housed at Iowa State University, is a Congressionally established Center administered by the U.S. Department of Agriculture’s National Institute of Food and Agriculture (NIFA). NCRAC tracks national and regional industry developments, convenes research, and provides education and technical resources to support the aquaculture industry in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The region includes diverse geographic and economic factors, with aquaculture producers focusing on different species, working in different climates, operating under different regulations, and more. In a 2020 industry listening session hosted by NCRAC, the potential for

cooperatives to aid small baitfish producers and allow them to reach a viable market scale arose as a potential strategy for developing the region’s baitfish sector. The listening session included aquaculture research and extension professionals and producers, with the stated goal of developing “effective communication between research and industry.” To learn more about the 2020 NCRAC listening session and review materials, tap or click [here](#).

The goals of this report are to respond to the potential strategy identified in the 2020 NCRAC listening session by

- further exploring the needs and challenges of the Great Lakes baitfish industry;
- reviewing how the cooperative model has been applied to similar challenges in aquaculture and other agricultural sectors; and
- reviewing processes and strategies for forming agricultural producer cooperative while identifying areas that would be integral to the development of a multi-state baitfish producers cooperative.

## Understanding the Cooperative Model in Aquaculture

In nearly every sector, cooperation has been used to combat the struggles of small farmers, rural businesses, consumers, and even aquaculture entrepreneurs. The cooperative business model, founded on principles of voluntary and open membership, democratic member control, profit sharing in proportion to use, independence, training and education, and cooperation, serves members who invest in and are the primary users of a business enterprise. Cooperatives are owned and controlled by the people who use them and operate with unique financial and governance systems based on the cooperative principles (Frederick, 2016). Cooperatives can serve various business functions for their users, including marketing, supply purchasing, service provision, and providing employment, by fulfilling a common need within the community of users (Frederick, 2016, pp.15-16).

Since the early 1800's in the United States, co-ops have supported small agricultural producers looking to reach new markets, increase profits, reduce risk, or grow their bargaining power. As of 2019, there were 64,017 cooperatives with 852,843 employees in the United States, each serving a unique community of members (Hueth, 2017). As of 2021, there were 452 cooperatives in Ohio alone, serving community needs across the state (Scott et.al, 2021).



According to data from the U.S. Department of Agriculture, cooperatives marketing fish had gross sales of \$232 million in 2019, which was down slightly from gross sales of \$239 million in 2018. There were an estimated 31 cooperatives marketing primarily fish in 2019 with approximately 5,084 members and 383 full and part time employees. Approximately 14 states had cooperatives with sales of fish, as shown in Table 2. Most of the states with active fishery cooperatives are situated along the coast. As shown in Table 2, there is not currently an active cooperative community marketing fish in the Great Lakes region.

State	Cooperative Net Sales of Fish (Million \$)
Alaska	44.194
Alabama	37.314
California	6.113
Connecticut	0.399
Idaho	0.020
Louisiana	0.703
Maryland	0.057
Maine	96.849
Minnesota	1.702
Missouri	0.002
Mississippi	14.511
New Hampshire	7.071
New Jersey	16.588
Washington	6.859
<b>Total</b>	<b>232.382</b>

Table 2: Cooperative sales of fish by state in 2019. Data from U.S. Department of Agriculture “Agricultural Cooperative Statistics 2019.”

Though the baitfish industry in the Great Lakes region is just starting to explore the cooperative business model, the aquaculture industry in the United States has a rich history of cooperation. In the late 1940s, small lobster fishers along the New England coastline united around a common need, marketing their catch. Marketing cooperatives like the Stonington Lobster Co-op in Stonington, Maine, brought together “fiercely independent men” to market their lobster to create better market prices for all. Though the enterprise started and remains dedicated to lobster fishers, the co-op now also markets shellfish and other game fish. The cooperative also now supplies members with fishing gear, baitfish for lobster fishermen, and, of course, fresh lobsters and crabs to locals and vacationers (*Our history*). As seen in Table 2 above and recent statistics from the U.S. Department of Agriculture, cooperatives like this stretch the United States coastline, bringing together big and small producers.

Agricultural economists studying the conditions under which a cooperative enterprise may provide benefits to producer members have argued that it may be beneficial for producers to form cooperatives where there are instances of market failure. In particular, cooperatives may benefit producers where they are able to lower costs of inputs or market products more efficiently; or aggregate producers’ market power to more effectively compete with other market players; or increase retail prices paid for products, such as through improving product quality; or to reduce producers’ exposure to risk (Sexton & Iskow, 1988).

### Challenges in the Baitfish Industry

As two cooperative scholars recognized, it is often stated that “cooperatives ‘must be born of necessity.’” (Sexton & Iskow, 1988, p. 1) The statement recognizes that cooperative businesses are often used to address the common challenges faced by members. When considering whether a cooperative enterprise will assist a group of producers, it is vital to clearly identify the common challenge the cooperative will solve for those producers.

To identify challenges faced by the Great Lakes baitfish industry, our team utilized recent academic research, conversations with industry specialists, and the information available in the 2020 NCRAC listening session report. While these challenges may not capture every issue faced by every producer in the region, they cover a broad swath of common problems.

#### Struggling to reach competitive scale

Small agricultural producers generally face challenges because of their scale. Whether they face issues accessing capital, reaching larger markets, or developing a consistent supply of product, these challenges can impede an operation’s ability to reach financial viability. For baitfish producers, growth to a financially viable scale



can also be limited by national competition. As noted by professionals in the field, Arkansas plays a major role in the production of baitfish, distributing baitfish across the country and creating a competitive landscape for baitfish producers in other areas.

### Efficiently purchasing supplies

For small producers, purchasing supplies can be a major financial obstacle, especially when just beginning operations. For any producer raising animals, the cost of feed is a common ongoing and major part of their variable costs. In a 2017 study, researchers found that nearly 22 percent of the expenses in baitfish and sportfish operations were for feeding (van Senten and Engle, 2017, p. 506). Generally, small producers, who are often buying smaller amounts of goods for their operations, are not able to access quantity-based discounts that larger producers might receive because of the volume of their purchases. This can mean that smaller purchases result in greater costs per unit, making those smaller purchases less economically efficient.

### Management burdens and inefficiencies

The literature about the baitfish industry across the country makes clear that the management requirements of aquaculture operations, and particularly management of administrative aspects of operations, has become cost-prohibitive for some small producers. For example, the cost of services or the amount of labor required to run a successful operation can include services and tasks such as record-keeping and account management. Perhaps the most important administrative cost for aquaculturists is the cost of compliance with federal, state, and local regulations. According to a study by Engle and van Senten's, nearly one-third of the costs of operation for baitfish and sportfish producers was attributable to managing regulatory requirements. These regulations range include labor standards, interstate transport requirements, fish health standards, environmental management requirements, and more (van Senten and Engle, 2017, p. 509). These expenses can be extremely burdensome for small producers.



### Lack of available data

Throughout the information gathering phase of this project, it became clear that there is a lack of available data about the baitfish industry and about baitfish producers' needs. For example, current research discusses regulations and retail challenges in the industry, but there has not been a white paper published on the needs of the baitfish industry in the NCRAC region since 2000. The U.S. Department of Agriculture's Census of Aquaculture faces challenges with producer response and reporting, which may create underreporting of information.

## **Cooperative Solutions to Current Challenges**

### Marketing cooperatives

The scale of operation for many small producers is difficult to overcome and can limit them from competitively entering broader markets. As baitfish farmers consider scaling their operations, the costs of additional regulatory compliance and other factors can be capital-intensive (van Senten et. al, 503). As shown previously, the cooperative model is already being used to market fish across the United States, allowing independent producers and fishers to aggregate their production to reach markets that they may not be able to serve individually. From small catfish producers looking to enter new markets to shellfish producers looking to scale production, marketing cooperatives are serving small producers in aquaculture.

For example, in 2000, small-scale oyster farmers working along the southern New England coast formed the Noank Aquaculture Cooperative, a farmer-owned marketing cooperative. The small producers formed the cooperative to get bigger returns for their shellfish and to more effectively market their oysters under a shared brand. Bringing together various oyster types, the cooperative supplies locally sourced and raised oysters for consumers in the New England market. The cooperative provides consumers across the region with sustainably produced shellfish. After 20 years, Noank Cooperative is still marketing shellfish up and down the eastern seaboard (*The cooperative*).

### Purchasing cooperatives

Another barrier to entering the aquaculture industry is the cost of supplies and equipment. Across many sectors, small producers cooperate to pool their bargaining power and to achieve better prices for the goods and services they need to run their operations. From small farmers to fast-food franchises, many independent businesses form cooperatives to purchase supplies cost-effectively.

Currently in the Great Lakes region, the Ohio Aquaculture Cooperative is working to help producer-members reduce their individual operational costs by aggregating their buying power. Formed in 2019, the cooperative coordinates group feed purchases multiple times throughout the year, passing along the savings of bulk-purchasing to members. The cooperative has also developed relationships with suppliers of other goods to help members purchase equipment like netting, tanks, testing supplies, and filtration supplies (*Services*).



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### Shared services cooperatives

Cooperative approaches to administrative functions like regulatory compliance and certain management tasks may present time-saving and cost-effective strategies for small baitfish producers. Where many small producers have similar operational structures, there may be redundancies in the operations of each business that allow for a cooperative approach.

For example, in the rural electric industry, enterprises have used cooperative approaches to develop shared services enterprises in an efficient and effective manner. Rural electric cooperatives have created data processing cooperatives, cooperatively-operated employee training centers, and even the Cooperative Response Center, Inc., a central customer contact, dispatch, and alarm center for rural electric cooperative enterprises. These shared service cooperatives provide business functions that are common to many enterprises throughout the United States, allowing members to have access to services without bearing the full cost as an individual enterprise (OSU South Centers, 2021).

## **Considerations When Exploring a Cooperative Enterprise**

As scholars have studied the success or failure of emerging agricultural cooperatives, they have investigated the factors that contribute to these outcomes. These factors can inform how producer groups explore the development of a new cooperative enterprise.

In a 2001 study, scholars found that the level of business volume of a new cooperative was imperative to the ability of the enterprise to survive its first three years of operation. Additional factors imperative to early firm survival were having accurate financial statements shared with the board in a timely manner; having a board of directors with previous cooperative experience; and spending significant effort on training for management and

the board in early years. These same factors have a positive relationship with member business growth. Scholars also found that business volume, sufficient equity capital at start-up, and the existence and enforcement of marketing agreements had significant positive impacts on the ability of a cooperative to achieve profitability in the first five years of operations. (Bruynis, Goldsmith, Hahn, and Taylor, 2001). In an earlier study, scholars shared, “Probably the two most important causes of failure among cooperatives are insufficient membership and, hence, insufficient business volume and insufficient equity financing” (Sexton and Iskow, p. 19).

As producers consider how and whether the cooperative model might benefit the Great Lakes region baitfish industry, it is important to recognize the considerations that cooperatives commonly face in their early development. Since cooperatives are formed to solve common challenges, producer engagement is integral to the planning and development process.

Below is a list of some questions baitfish producers and their advisors may want to consider when exploring the feasibility of a cooperative enterprise. Though these questions do not fully cover all considerations in the cooperative development process, they can serve as a first step. As noted, producers exploring a cooperative enterprise may find it difficult to locate accurate, comprehensive data. To help overcome this lack of data, producers might consider contacting their local or regional aquaculture extension specialists to get a better idea of the state of aquaculture and to make industry connections. It is also recommended that producers reach out to other producers to understand the commonality of their challenges and desire to cooperate.

#### Considerations when exploring a cooperative enterprise of any type

- Does the proposed cooperative have a sufficient level of membership?
- Are producers willing to contribute financially to the enterprise?
- Are producers willing to contribute to the governance and decision-making of the business?
- Are producers willing to cooperate and form a collaborative business entity with shared control and financial returns?

#### Considerations when exploring a marketing cooperative

- What is the volume of marketable product being produced in your area or region?
- Can producers develop and agree to a set of quality standards for the product they will market?
- Do producers have strongly branded products or relationships with retailers that would inhibit their working together?
- Are producers serving different markets and market channels?
- Is there an effective way to physically aggregate products for distribution across the region?

#### Considerations when exploring a purchasing cooperative

- What is the volume of product that producers collectively need to purchase? Would buying at this larger volume reduce costs?
- Are producers facing challenges in getting the supplies they need?
- Are the supplies needed highly perishable? If so, can the group implement effective storage and distribution to ensure that the quality of supplies is not impacted?
- Do producers need similar types of supplies?
- Are producers willing to purchase supplies through the cooperative?
- What are the distribution channels that would be used to deliver supplies to members?

#### Considerations when forming a service cooperative

- What common services do individual producers need?
- Are there ways to minimize costs through sharing services?
- Are the producers willing to have shared information spaces through a shared service position?
- Could regulation management benefit all the businesses involved?

## The Cooperative Development Process

As baitfish producers consider whether a cooperative is a suitable model to address their challenges, it is important to understand the cooperative development process. The U.S. Department of Agriculture has provided a useful outline of the cooperative development process in the publication, "Vital Steps: A Cooperative Feasibility Study Guide," which is excerpted below (Brockhouse, Jr. & Wadsworth, 2016). Please note, the cooperative development process can be unique and variable, depending on the resources and constraints of a group. This outline is meant as a general overview rather than a detailed, prescriptive approach.

### *Identify Economic Need*

1. *Determine the economic need. Leaders meet to discuss and to determine the economic need that a cooperative might meet.*
2. *Hold an exploratory meeting. Hold a meeting of potential member-users to decide if interest is sufficient to support a cooperative*
  - a. *Sub-step: select a steering committee to lead and move process forward.*

### *Deliberate*

3. *Conduct a member-use analysis and initial market analysis. Survey the potential member-users.*
  - a. *Sub-step: hold a second member exploratory meeting.*
4. *Conduct a feasibility study. This helps determine if the proposed cooperative is feasible based on assumptions, researched information, and member-use and initial market analysis.*
  - a. *Sub-step: hold a third member exploratory meeting.*
5. *Prepare a business plan. Complete an indepth business plan using feasibility study as foundation.*

### *Implement*

6. *Employ legal counsel to draft and complete legal papers. Articles of incorporation and bylaws provide legal standing and how the cooperative will conduct business consistent with State statutes.*
  - a. *Sub-step: hold a fourth member exploratory meeting.*
7. *Hold first meeting of the cooperative. Approve bylaws, discuss business plan, elect first board of directors.*

### *Execute*

8. *Convene first board of directors meeting. Elect officers, appoint committees, discuss next steps.*
9. *Hold a membership drive, if necessary for more members and commitment.*
10. *Acquire capital. Raise from members and by borrowing, as needed.*
11. *Hire a manager. Board seeks and hires qualified manager.*
12. *Acquire equipment and facilities, begin operations. Board and manager determine equipment and facilities necessary; manager hires employees.*

(Brockhouse, Jr. & Wadsworth, 2016, p. 25)

## Conclusion

The United States baitfish industry is a multi-million-dollar business with producers of different sizes and markets (National Agricultural Statistics Service, 2019, p. 35). Though the aquaculture industry has a long history of cooperation along the coasts with active cooperatives marketing on behalf of fishers, there are only a few aquaculture cooperatives operating in the Great Lakes region. In the baitfish industry, small producers currently face challenges reaching viable scales, efficiently purchasing supplies, and managing administrative functions and regulatory compliance. Cooperatives may provide solutions to these challenges through collective power via marketing, purchasing, and shared services. However, forming a successful co-op requires the exploration of many considerations as producers shape a shared business for their collective success.



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