

SUMMARY: Ozark Fisheries site visit, www.ozarkfisheries.com

June 25, 2024; Attending, David Brune and Bob Pierce, University of Missouri- Columbia
Tour guide, Margaret Cleveland, Senior Vice President, Ozark Fisheries.

OVERVIEW

Margaret Cleveland is a fourth-generation fish-farmer and has served for the last six years as senior vice president of operations at Ozark Fisheries (OF) located at 1100 Ozark Fisheries Rd, Stoutland, MO 65567.



Ozark Fisheries Entrance and Administrative Offices

OF grows and sells five types of ornamental goldfish two types of Koi, as well as, crayfish, bullfrogs, tadpoles, snails, mosquito fish, and catfish. OF owns and operates approximately 300 acres of fishponds at its Missouri location and an additional 300 acres at an Indiana location



Ozark Fisheries Grow-out Ponds in Missouri

Spawning of the fish is carried out in May to June, depending on pond water temperature. When the ponds reach the optimum temperature of 72 F, the ponds are seined, and brood fish are brought to an indoor spawning facility where individual fish are hand injected with hormones to stimulate egg production. After injection, the fish spawn within 12 hrs. The eggs are allowed to attach to plastic mats, after which, the brood fish are removed and returned to the ponds. The egg-covered mats are transferred to hatchery tanks where they are held at 71-72 F and at high O₂ concentration.



Ozark Fisheries Indoor Spawning Facility

The eggs begin to hatch after 2-3 days; after hatching, the fry are held and fed in the tanks for 2-3 days until they are large enough to be stocked in ponds. The fingerlings are transferred to the ponds in bags; the bags are allowed to float in the ponds until bag water temperature stabilizes to pond water temperature, at which point the fingerlings are released to the pond. In the ponds, the fish are fed sinking feed to minimize bird predation. Feed is distributed into ponds using blowers from trucks carrying feed bins. The fish are fed once per day. The fish spend 99% of their growth time in ponds (Overview 1 & 2).

After seining from ponds, fish are transferred to holding raceways via a “water slide” or PVC tube discharging from a tank truck, where they are acclimated to either pond or spring water temperatures in preparation for shipping. In the raceways fish are hand sorted by color and size prior to being transferred to the shipping area. In the holding raceways, salt is added to the water to eliminate external parasites (Holding Tanks 1, 2 and 3).





Ozark Fisheries Holding Raceways Prior to Packing and Shipping

At the shipping facility customer, orders are filled by 1:00 pm in the afternoon, where they are ready for shipping via Federal Express, or UPS by 3-5:00 pm. The fish are shipped in various sized cardboard boxes, containing double plastic bags. OF patented the “shipping in a box concept” which is now widely used throughout the industry. Shipping boxes contain Styrofoam, foil, and freezer-packs to maintain low temperatures in transit. The plastic bags are inflated with pure oxygen. Margaret’s great-grandfather started the operation in 1926: He was interested in growing trout, but at that time, there was little market demand for trout. He had a friend that operated a 5 and 10 cent store and discovered that goldfish could be marketed as novelty items at those stores, and thus was born OF’s ornamental fish business (Shipping 1, 2, 3, and 4).



Ozark Fisheries Shipping Facility

Most of OF sales are to wholesale dealers but they also sell to individual buyers. Individual orders (of fish) are sorted into buckets with flowing water, having been transferred from holding raceways, after being seined from grow-out ponds.

Any order received prior to 10:00 am will ship that day for arrival to the buyer the following day. Software developed by OF is used to determine the best shipping methods for a buyer’s location. The semi-automated packing processes tracks the weight of individual order to minimize freight costs. Shipping is the number one operational cost for OF, while labor cost is second. Extra fish

are included in each order to ensure customers receive the number ordered. OF guarantees live delivery: OF's typical refund rate for lost fish (in transit) averages less than 3% of total sales.



Ozark Fisheries Packing and Shipping Operations

Demand for goldfish increased after the COVID pandemic. At that time the public was restricted to their homes, and consequently, they developed increased interest in purchasing pets. The cost of raising and owning a dog is ~\$2,500/yr, a feline around ~\$1,300/yr while fish only cost around \$250/yr.

Improvements in technology have played an important role in OF's success and profitability. In particular, the development of software to track pond fish stocks within the Missouri and Indiana ponds, the status of customer orders, shipping location, and best shipping method is managed using software developed by OF with help from programming consultants (Software 1 and 2).

The fish produced by OF include common goldfish, red minnows, fathead minnows, Sarasa, shubunkin, white, and fantail goldfish, standard-fin and butterfly-fin koi, as well as crayfish, bullfrogs, tadpoles, snails, mosquito fish, and catfish. The primary sales objective to offer fish that appear bright and colorful to the consumer.



Ozark Fisheries Products

Videos from Ozark Fisheries Site-Visit (available on MU Teams website)

Overview 1

https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/_layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Documents%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Overview%201%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview%2E09320021%2D6dd2%2D4630%2Daa8a%2D626423662609

Overview 2

https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/_layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Documents%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Overview%202%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview%2Ecd8f652%2D2745%2D4aaa%2Dbc41%2Dd020496ce134

Holding Tanks 1

https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/_layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Documents%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Holding%20Tanks%201%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview%2E8464c2e6%2Dedbb%2D4f5e%2Dac42%2D9f67389053f9

Holding Tanks 2

https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/_layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Documents%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Holding%20Tanks%202%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview%2Eaca1790c%2D8876%2D4eea%2D8d27%2Dd7534be9822a

Holding Tank 3

https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/_layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Documents%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Holding%20Tanks%203%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview%2Ed523c783%2D66c1%2D4933%2D8f8f%2Dac2dbe2bf072

Shipping 1

https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/_layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Documents%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Shipping%201%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview%2E89ca96bb%2Dd51d%2D4ead%2D815d%2D54d3adbe32c6

Shipping 2

<https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/ layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20DocuDocum%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20ShippinS%202%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCoA ddr%2Eview%2E96efa392%2D8822%2D4c45%2D83b8%2D7aa9c1db4d8f>

Shipping 3

<https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/ layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Docu ments%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Shippin g%203%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCo pied%2Eview%2Eb1c7d8ee%2D74f0%2D482b%2D9dd6%2D0c4007ea7e1a>

Shipping 4

<https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/ layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Docu ments%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Shippin g%204%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCo pied%2Eview%2E9c51804b%2D36ad%2D45fc%2D9533%2D6b2107f87e6d>

Software 1

<https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/ layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Docu ments%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzarks%20Farms%20Softwa re%201%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCo pied%2Eview%2E238e8dcd%2Dd8f1%2D424c%2D8a94%2Db047c5a8d6ac>

Software 2

<https://mailmissouri.sharepoint.com/sites/NCRAC-Ogrp/ layouts/15/stream.aspx?id=%2Fsites%2FNCRAC%2DOgrp%2FShared%20Docu ments%2FGeneral%2FOzark%20Fisheries%20Videos%2FOzark%20Farms%20Softwar e%202%2EMOV&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCop ied%2Eview%2E114d1d4b%2D0dfe%2D400d%2Da975%2D91c98863b743>