



FISH IN THE FIELDS™

Program Implementation Guide

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FISH IN THE FIELDS™

The program brings an innovative conservation practice standard to Arkansas rice farming that builds on traditional practices from around the world. This rice-fish sequential cropping system offers Arkansas rice producers a practical way to generate additional income from existing rice acreage during the winter months when fields would otherwise sit idle.



THE PROGRAM OFFERS TRIPLE BENEFITS FOR ARKANSAS RICE FARMERS:

- **Economic Value:** An additional winter crop creating year-round productivity from the same land and water
- **Seamless Integration:** Compatible with conventional rice cultivation practices, winter field management and existing conservation programs
- **Environmental Benefits:** Reduces greenhouse gas emissions and supports waterfowl habitat along the Mississippi Flyway



WHAT IS A FISH IN THE FIELDS™ PLAN?

A Fish in the Fields™ plan outlines how to integrate winter fish production into your existing rice operation. In a typical Arkansas rice season, fields are prepped and planted in spring, harvested in fall, and may be flooded for winter waterfowl habitat or duck hunting leases.

Fish in the Fields™ enhances this winter flooding period by introducing fish after rice harvest. Native species are stocked in early November and grow naturally on the abundant plankton and insects that develop during rice straw decomposition. Fields are drained and fish are harvested in early March, before spring field preparation begins.

Key Planning Considerations for Arkansas Producers:

- Compatibility with precision-leveled rice fields (zero-grade & precision-grade)
- Availability of water management infrastructure for effective irrigation and drainage
- Integration with existing winter flooding programs (USDA-NRCS, Arkansas Game & Fish)
- Coordination with waterfowl hunting activities (if applicable)
- Field considerations (e.g., field accessibility, water sources, habitat suitability)
- Utilize established Arkansas aquaculture infrastructure and expertise

IMPLEMENTATION PROCESS

1. Assess your fields - Identify fields with:

- Good water control, established levees, good truck access, and low spots that can serve as fish refuge areas. Fields that already receive winter flooding are ideal candidates.

2. Plan basic infrastructure - Minimal modifications are needed for most Arkansas operations:

- Fish screens for water control structures
- Deepened edge of field ditches for fish refuge and collection.
- Harvest basin location identification

3. Create management plan - Work with Arkansas aquaculture experts to develop:

- Stocking approach (species selection, density, timing)
- Water management strategy (e.g., surface or well water)
- Harvest method and timeline

4. Coordinate with existing programs - Align with:

- NRCS water management initiatives
- Winter waterfowl programs
- Water quality improvement efforts
- Hunting lease arrangements (if applicable)

5. Develop partnerships - Connect with:

- Local fish farmers for fingerling supply (Arkansas leads the nation in minnow production)
- Processing facilities or live fish markets
- University of Arkansas, Fayetteville greenhouse gas specialists
- University of Arkansas, Pine Bluff aquaculture specialists
- Arkansas Rice Commission and/or USA Rice

6. Estimate costs and returns - With Arkansas-specific rates for:

- Infrastructure modifications (typically minimal)
- Fingerling costs from local suppliers
- Operational requirements
- Expected yields (approximately 5 to 7 tons per 100 acres)
- Value-added processing options

7. Start small and scale - Begin with a demonstration area to:

- Test water management approaches
- Monitor fish performance
- Document economic and environmental outcomes
- Refine practices for Arkansas conditions

Image to the right: Efficient fish harvest requires well-timed water drainage. Once levels are low, fish can be crowded with a seine and removed using a vacuum pump.



MANAGEMENT REQUIREMENTS

Core Components:

- Standardized stocking protocol (golden shiners, fathead minnows, or other native species from established Arkansas hatcheries)
- Simple screening systems at all inlets/outlets
- Deepened edge of field ditches within fields for fish refuge
- Harvest method selection (seine netting and/or pumping)
- Basic water quality monitoring

Required Equipment:

- Water control structures with simple screening for all inlets/outlets
- Harvest equipment (e.g., seine nets and/or fish vacuum pump)
- Basic water quality testing equipment (e.g., dissolved oxygen, temperature)

Management Timeline:

- Late October/Early November: Rice harvest completed, fields flooded
- Early-Mid November: Fish stocked from local Arkansas hatcheries
- November-February: Periodic monitoring of water levels and water quality
- February/March: Fields drained, fish harvest completed before spring field preparation
- March/April: Normal field preparation for rice growing begins



GETTING STARTED

For more information or to participate in our upcoming Arkansas field trials, please contact:

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WATER MANAGEMENT FOR ARKANSAS CONDITIONS

The primary objective is to maintain adequate water depth throughout winter months to support fish growth while using the natural microbial productivity that develops during rice straw decomposition—a process familiar to Arkansas rice farmers who flood for waterfowl.

Practical Water Recommendations:

- Minimum rice paddy depth: 6-8 inches (15-20 centimeters) across most of the field
- Deeper edge of field refuge areas: 36-48 inches (90-120 centimeters) in designated areas
- Field drainage: Time with fish harvest plans to ensure maximum fish recovery
- Water quality monitoring: Occasional dissolved oxygen checks

Infrastructure Considerations:

- Standard Arkansas water control structures with simple screening (ex. 18 x16 mesh, or 1.13 x 1.31mm)
- Deepened corner or interior edge of field ditch for fish collection
- Maintain levee integrity to prevent fish escape and vehicular access for fish removal

Dual-Use Benefits:

- Compatible with existing waterfowl habitat management
- Can enhance duck hunting opportunities
- Works with existing water management practices

Integration with current practices: This program builds on Arkansas's existing strengths in both rice production and aquaculture. As the nation's largest producer of rice and baitfish, Arkansas has all the necessary expertise, infrastructure, and markets to make Fish in the Fields™ successful.