

IOWA STATE UNIVERSITY

Extension and Outreach

30+ Years

Observations of Iowa's Aquaculture Industry

J.E. Morris



Background

- Grew up on a small farm in southwest Iowa
- B.S. Iowa State University - 1979
 - Fish Tech – Indiana DNR (Lake Michigan) and Texas A&M University
- M.S. Texas A&M University - 1982

Background

- Hatchery Manager – Texas (1982-1986)
 - 4th manager in 6 years
 - Channel catfish hatchery and processing
 - Freshwater shrimp
 - Sold fish for pond stocking – BG, CC, LMB and fathead minnows
 - Texas Aquaculture Association

Experiences Garnered

- 75% of the 1st year – aquaculture knowledge
- 75% of the 4th year – marketing knowledge
- Learned more about fish biology and water quality in 4 years as a aquaculturist than 6+ years of college.
- Hard to find staff.
- Aquaculture is hard work!

Post Fish Farm

- Ph.D. Mississippi State University - 1988
- Returned to Iowa as 1st Fisheries/Aquaculture Extension Specialist
- Agriculture changes
- Farmer's Markets
- Local food scene



The screenshot shows the 'Market to Market Classroom About' page. At the top, it features the 'MARKET to MARKET CLASSROOM' logo and the text 'FULL EPISODES OUR STORIES IN THE NEWS'. Below this is a search bar with 'Any' selected in both dropdown menus and a search button. A large image of a '200 MORE FARM FOR SALE' sign is displayed. The main heading is '1980s Farm Crisis'. The text below explains that during the 1980s, farmers in the United States were confronted by an economic crisis more severe than any since the Great Depression. It lists resources such as video stories, background essays, discussion questions, challenges, and related resources. The DuPont logo is visible in the bottom right corner.

First Decade

- Extension/Teaching/Administration Appointment
 - Fisheries and Aquaculture Extension Programs
 - Pond fisheries
 - Water quality
 - Aquaculture
 - Aquatic plants
 - Wide range of calls

Initial Impressions

- Limited institutional support
 - Extension staff in state and region
 - Disease
 - Economics
 - State agencies
 - Informed that since ponds freeze over, aquaculture can't occur in Iowa

However----

- Private hatcheries with multiple generations
 - Providers of fish for private ponds
 - LMB, CC, BG and Grass Carp
- Other producers
 - Trout producers
 - Cage WYE
- Past CC producers in Ames



Extension Publications

- None developed specific to fisheries or aquaculture
- Clients were using pubs from southern universities including Auburn and Texas A&M
- Dated publications from other Midwestern states

Extension Workshops

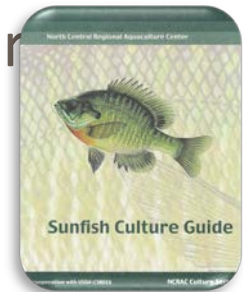
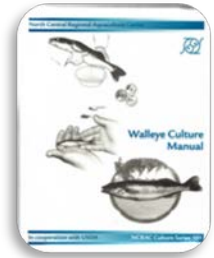
- Workshops were on basic aquaculture principles
 - Is fish farming for you?
 - Water quality
 - Species selection
- State/regional workshops
 - Initially large numbers of attendees

Other Sources of Information

- Kirkwood Community College
 - Short courses
 - Tilapia 101 in indoor systems
- National FFA Program
 - State high school FFA programs that focused aquaculture increased 10 ~70+
 - Combined agriculture with basic sciences
- Agency staff

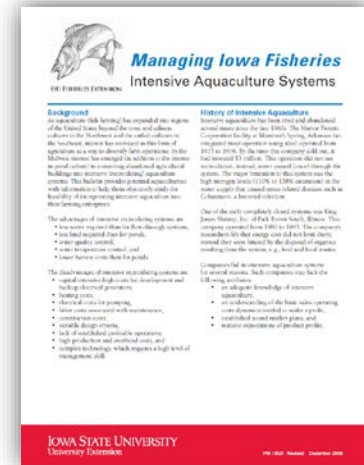
First Decade Outcomes

- Extension publications
- Iowa Aquaculture Association in 1990
- Decreased number of attendees at workshops
- Tilapia and indoor systems decreased in number



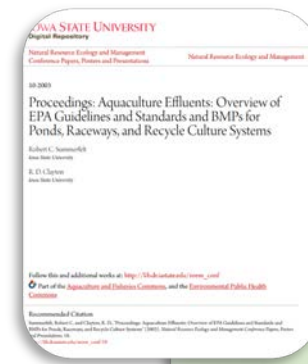
Second Decade

- Extension publications
- Appointment
 - Extension appointment decreased and in 2004 removed
- Research/Teaching/Administration
- New ISU Extension Specialist appointed



Second Decade

- EPA rules on aquaculture effluents
- Aquatic Invasive Species (AIS)
- USDA-APHIS 2006/2008/2014
 - VHS outbreak in Great Lakes
 - Limited interstate transport of fish around Great Lakes
 - Increased fish health regulations



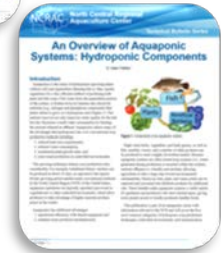
Second Decade Outcomes

- Iowa Aquaculture Association
 - Limited involvement by industry
- Iowa aquaculturists adjust to new regulations
 - Fish health inspections
 - HACCP plans
 - AIS
 - Seafood
 - Biosecurity



Third Decade

- Appointment
 - In 2012 became NCRAC Director
- New Extension Specialist
 - Aquaponics focus
- Renewed interest in indoor RAS operations
- New producers – Aquaponics, Barramundi, Saltwater Shrimp



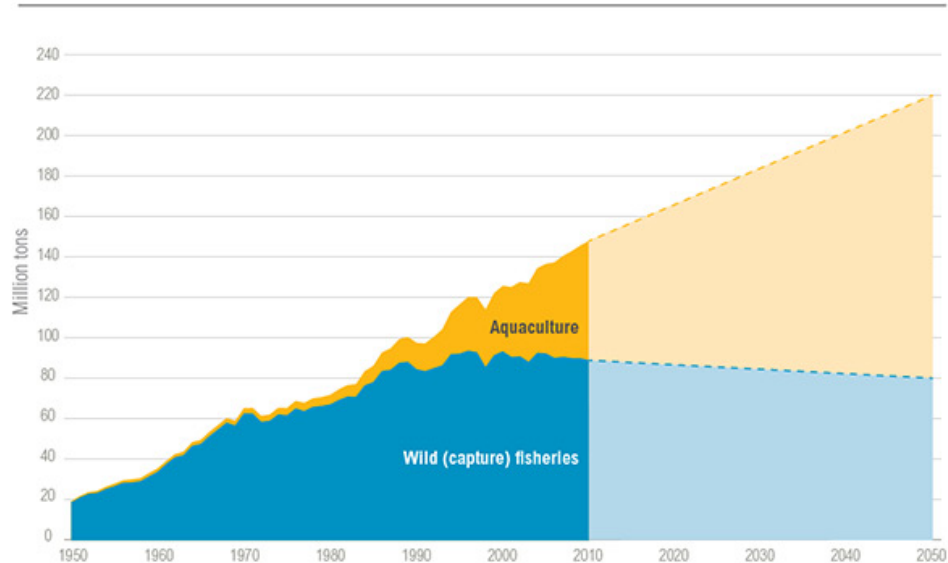
Today's Situation

- Appointment
 - Limited extension along with research/teaching/administration
- Extension publications review for content and delivery
- Increased number of Aquaculture Unit License issued
- Importance of market research

CURRENT STATUS OF REGIONAL AQUACULTURE

Rising Seafood Demand

Aquaculture Is Expanding to Meet World Fish Demand

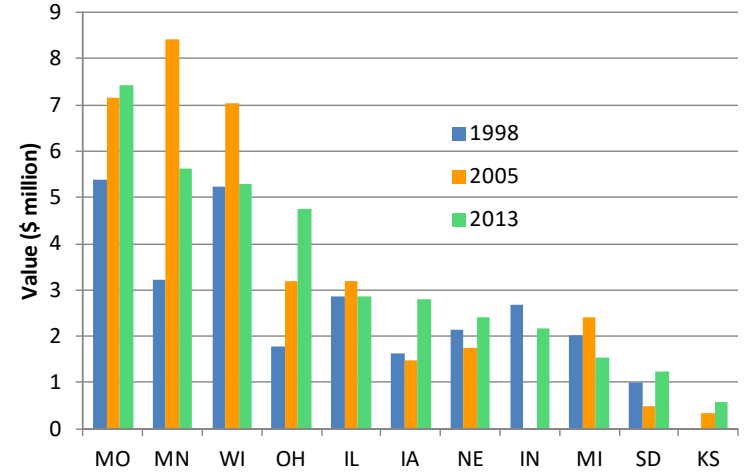
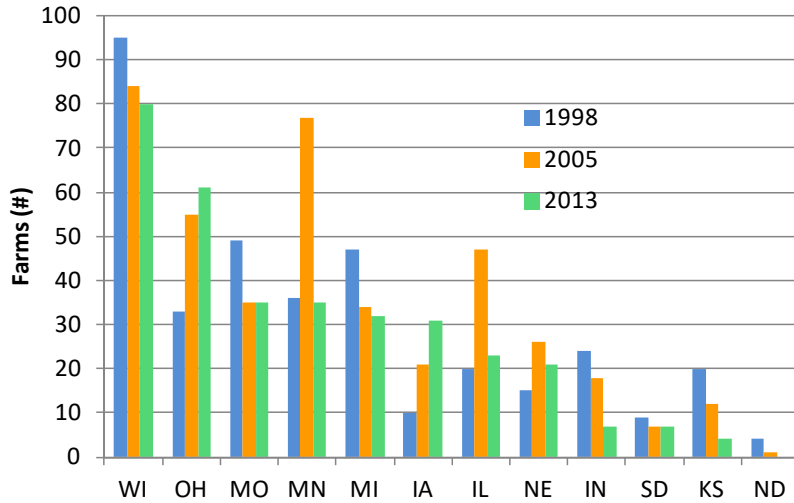


Source: Historical data 1950–2010: FAO. 2014. "FishStatJ." Rome: FAO. Projections 2011–2050: Calculated at WRI, assumes 10 percent reduction in wild fish catch between 2010 and 2050, and linear growth of aquaculture production at an additional 2 million tons per year between 2010 and 2050.

See www.wri.org/publication/improving-aquaculture for full paper.

 WORLD RESOURCES INSTITUTE

NCR Aquaculture



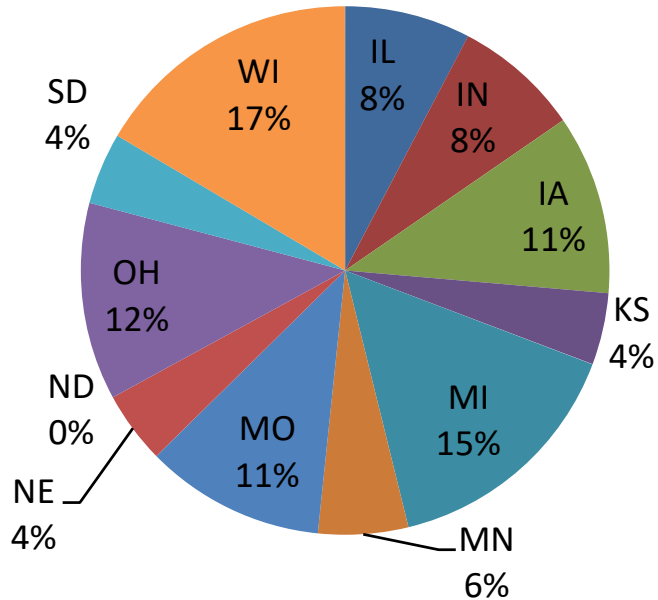


2014 NCR Aquaculture Needs Survey

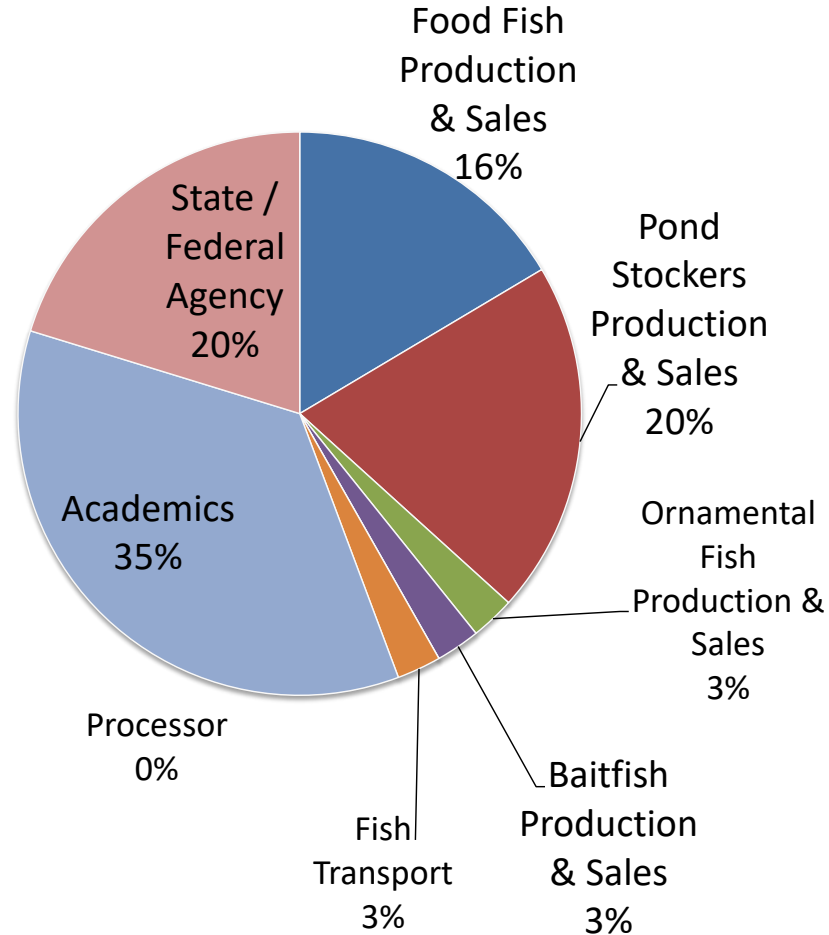
C. Weeks, W. Lynch, J. Morris

Background Information

Respondent % by State

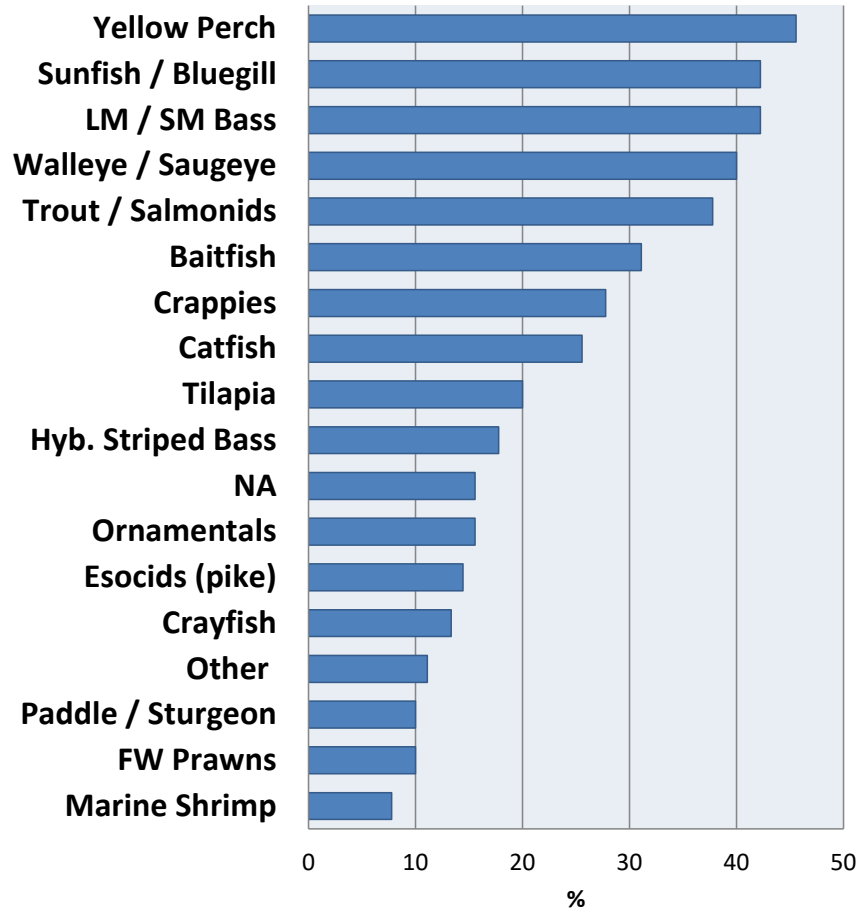


Survey Participants Occupation



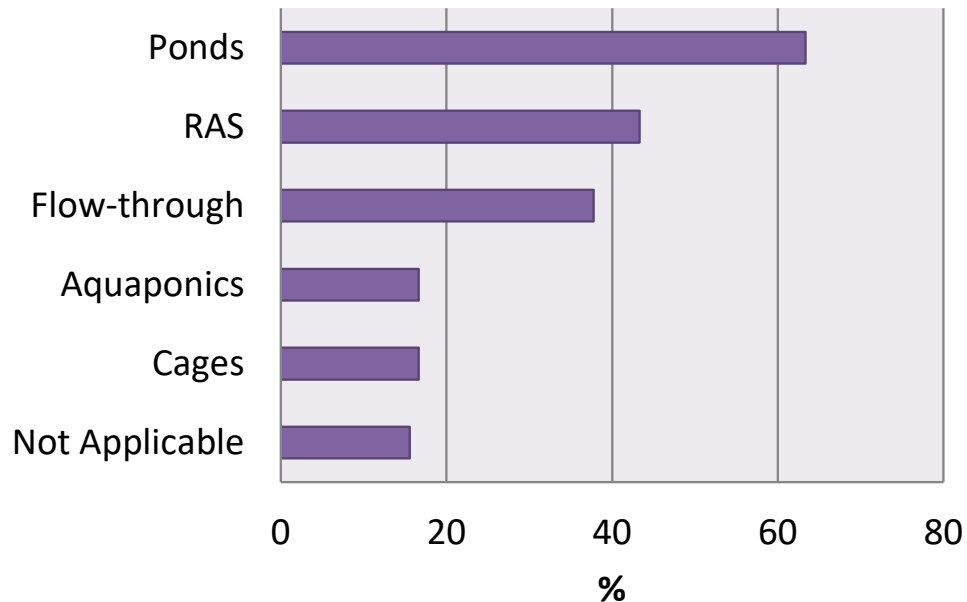
Which are all the species that you work with (check all that apply)?

NCR Aquaculture Species



What type of aquaculture systems do you have at your facility or most accustomed to working with (check all that apply)?

NCR Aquaculture Systems

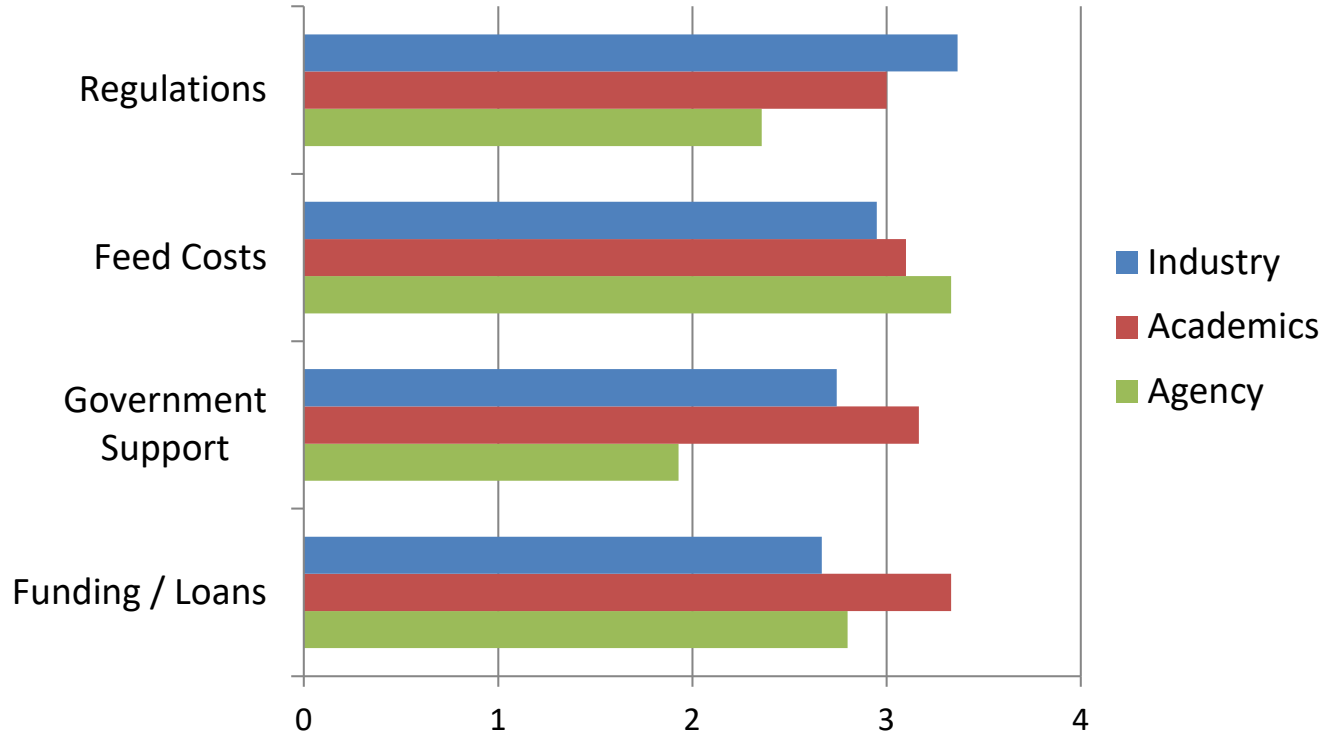


Impediments


Rate each item based on the severity that it is
impeding commercial aquaculture development
in the NCR

(1 = No Problem, 4 = Major Problem)

2014 Impediments / Industry top 4



Priorities

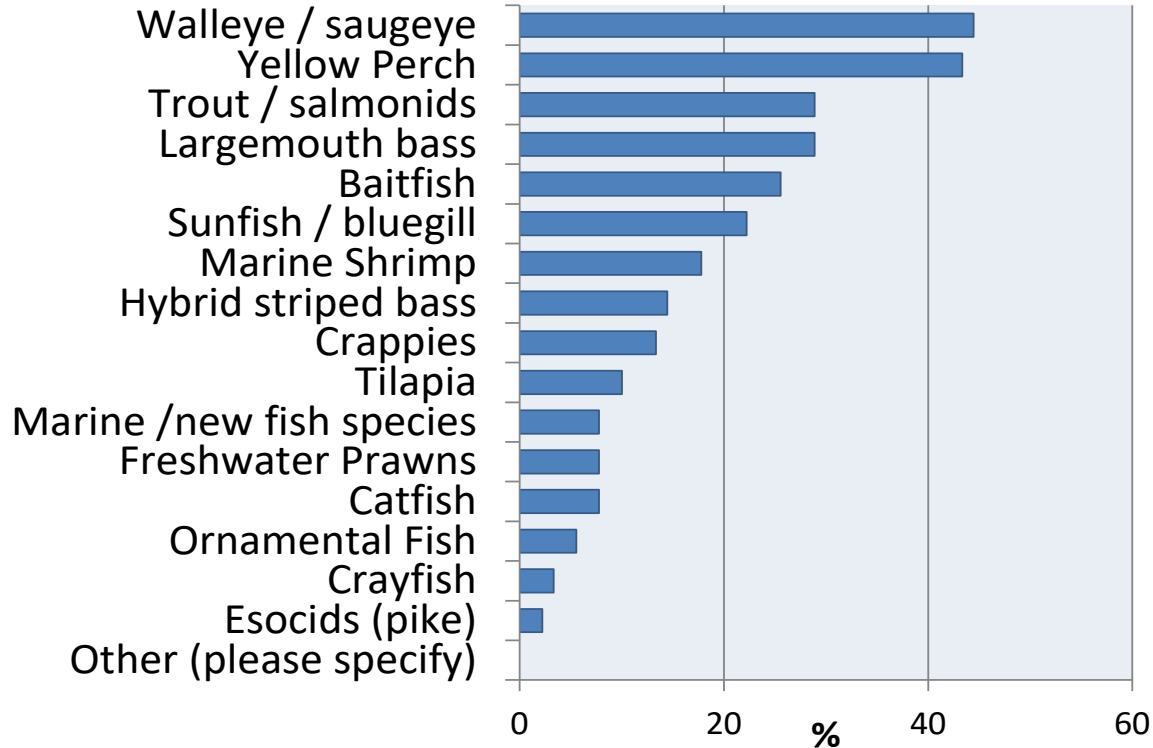


North Central Regional Aquaculture Center (NCRAC)

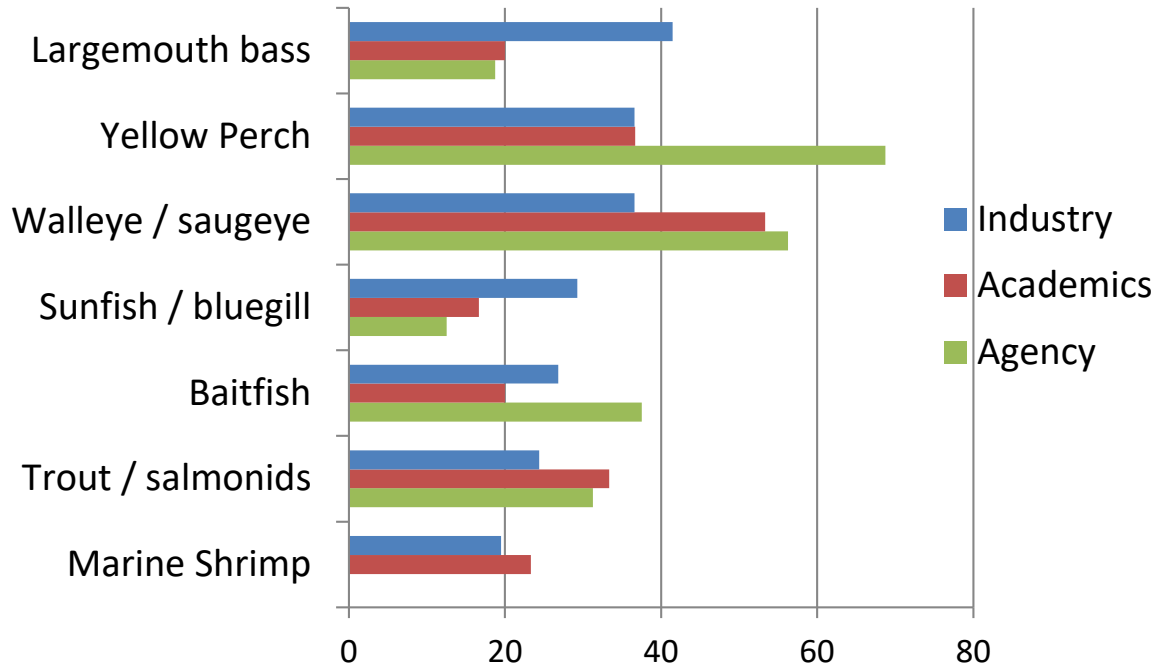
The image shows a black outline map of the North Central region of the United States, including states such as North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Minnesota, Iowa, Missouri, Arkansas, Louisiana, Wisconsin, Illinois, Indiana, Michigan, Ohio, and Pennsylvania. A red, slanted stamp with the text "North Central Regional Aquaculture Center (NCRAC)" is overlaid on the map.

Priorities - Species

All Responses Combined



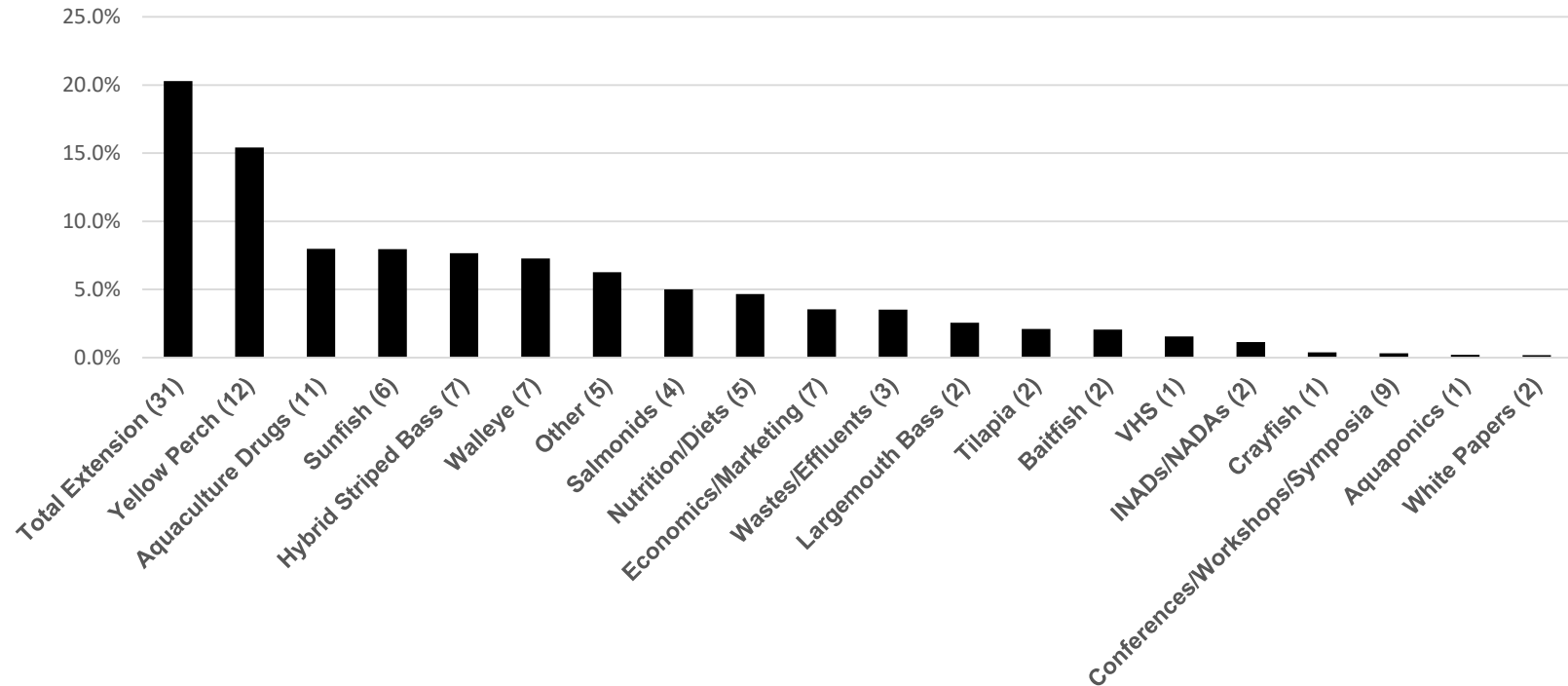
Priorities (Species) / Industry Top 7



Industry	Academics	Agency
Largemouth Bass	Walleye / Saugeye	Yellow Perch
Yellow Perch	Yellow Perch	Walleye / Saugeye
Walleye / Saugeye	Trout	Baitfish

NCRAC Funding by Subject (Number of Projects)

1988-2018



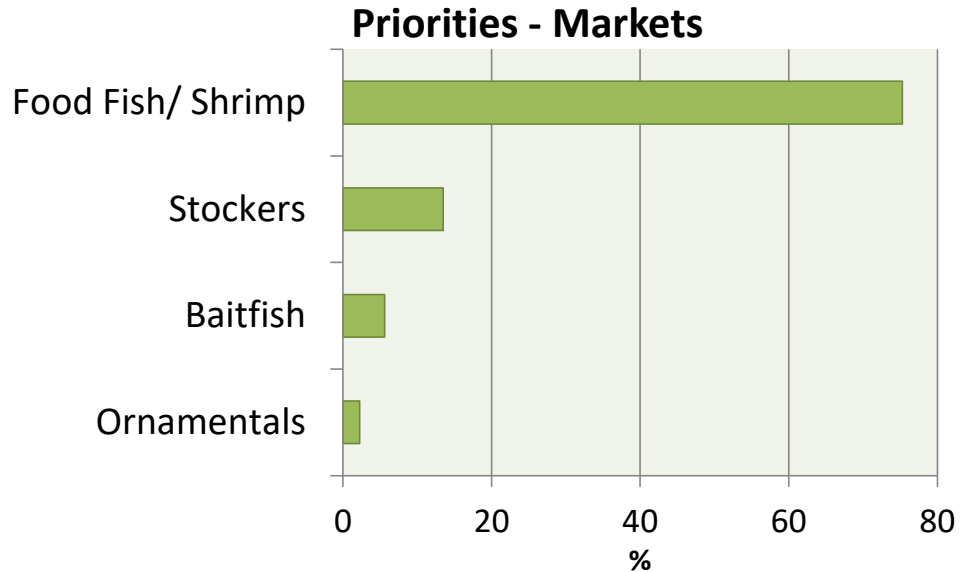
Species Priorities by State

Observation: Difficulty in selecting a primary #1 species across NCR states

	#1	#2	#3
IL	Tilapia	Largemouth bass	Hybrid striped bass
IN	Largemouth bass	Yellow Perch	Marine Shrimp
IA	Marine Shrimp	Yellow Perch	Walleye / saugeye
KS	Catfish	Sunfish / bluegill	Largemouth bass
MI	Trout / salmonids	Walleye / saugeye	Yellow Perch
MN	Baitfish	Yellow Perch	Walleye / saugeye
MO	Sunfish / bluegill	Largemouth bass	Crappies
NE	Walleye / saugeye	Yellow Perch	Trout / salmonids
OH	Largemouth bass	Yellow Perch	Walleye / saugeye
SD	Baitfish	Yellow Perch	Marine /new
WI	Walleye / saugeye	Trout / salmonids	Yellow Perch

Priorities - Markets

If NCRAC were to focus on one market with the best potential to substantially increase NCR aquaculture in the next five years, it would be (check only one):

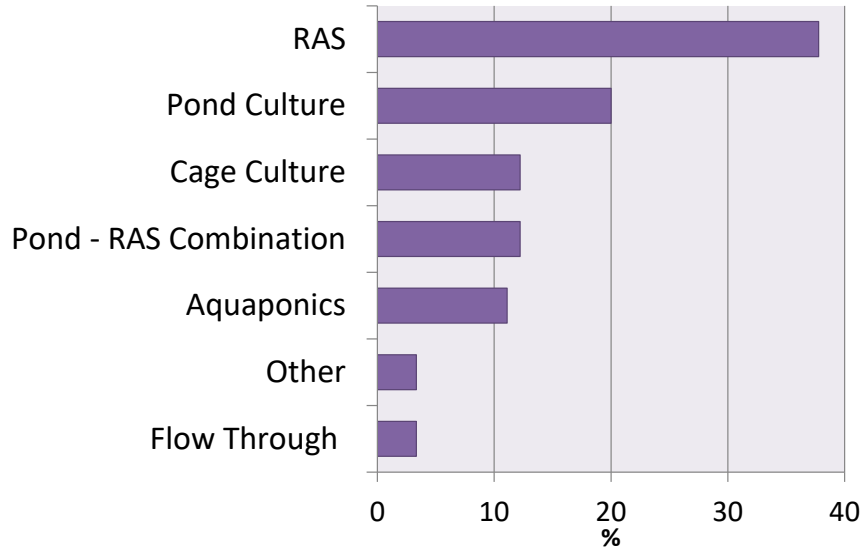


All Responses Combined

Priorities - Systems

If NCRAC were to focus on one rearing system with the best potential to substantially increase NCR aquaculture in the next five years, it would be (check only one):

Priorities - Systems



All Responses Combined

Priorities - Research

Industry	Academics	Agency
FM/Oil Replacement	Fry / Fingerling Nutrition	Fry / Fingerling Nutrition
Fry / Fingerling Nutrition	RAS	Market Development /Economics
Market Development /Economics	FM/Oil Replacement	FM/Oil Replacement

Priorities - Extension

Industry	Academics	Agency
Contact for Questions	Advanced Culture Workshops	Help with Regulations
Help with Regulations	Help with Regulations	Contact for Questions
Annual Regional Conference	Contact for Questions	Fish Health / Biosecurity Workshop

NCRAC.ORG

Content by Category ~ People News Events Projects Publications Presentations Forms Videos Regional Extension Contacts



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The North Central Regional Aquaculture Center (NCRAC) is one of the five Regional Aquaculture Centers established by Congress that are administered by the U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service. NCRAC is an administrative unit that serves the twelve states in the North Central Region: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

- [Operations Manual October 2015.pdf](#)
- [Outrigger](#)
- [Policies February 2019](#)
- [Strategic Plan](#)
- [Annual Report 2016](#)

[Read more](#)

Recent News

[2018 Census of Aquaculture Deadline Extended to March 22, 2019](#)
February 1, 2019

[2019 Wisconsin Aquaculture Association Annual Conference Dates Announced](#)
January 15, 2019

[2019 Iowa Aquaculture Conference Dates Announced](#)
December 5, 2018

[SBA Economic Injury Disaster Loans Available to North Dakota Small Businesses](#)
November 13, 2018

[Grant Funding Opportunity Announcement for Small Businesses](#)
August 6, 2018

[All News](#)

Upcoming Events

[2019 Iowa Aquaculture Conference](#)
Friday, March 22, 2019 - 8:00am to Saturday
March 23, 2019 - 5:00pm

State Import Regulations

[State Import Regulations](#)

[Transport Regulations and Approved Aquatic Species](#)

[Arkansas Import Regulations](#)

[Nebraska Import Regulations](#)

[Colorado Import Regulations](#)

[North Dakota Import Regulations](#)

[Illinois Import Regulations](#)

[Ohio Import Regulations](#)

[Indiana Import Regulations](#)

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[Wisconsin Import Regulations](#)

[Missouri Import Regulations](#)

[Wyoming Import Regulations](#)

[Montana Import Regulations](#)

Publications

To see the scholarly work done by the North Central Regional Aquaculture Center, choose one of these options:

- [view the NCRAC Publications List](#)
- [visit the Iowa State University Digital Repository](#)

Reader from: Cambridge, England, United Kingdom
Publication: [Management for Fish Culture Ponds](#)
Joseph E. Martin, C. C. MacIver



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22 of 115
in the past year

72	26,968	12,932
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