Project 930

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United States Department of Agriculture

National Agricultural Statistics Service

Animal and Plant Health Inspection Service

NATIONAL AGRICULTURAL STATISTICS SERVICE

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2010 GENERAL CATFISH MANAGEMENT REPORT

Stratum	POID	Tract	Attempted Contacts		
			Date	Time	Notes

Beginning Time
0001
___ ___ ___ ___

BEGINNING TIME [Military]

INTRODUCTION

[Rephrase in your own words.]

The purpose of this inquiry is to collect information on catfish production for APHIS-National Animal Health Monitoring System. Your cooperation is very important in order to identify management practices, disease problems, and predation problems accurately. You may find it easier to answer some of the questions if you have records available. Individual reports are kept confidential.

Your response is voluntary and not required by law. However, your report is needed to make Regional and National estimates as accurate as possible.

NAHMS-230

PART I: FINGERLING PRODUCTION

Did this operation breed catfish, operate a hatchery, or raise fry to fingerlings during 2009?	Code
1 ☐ Yes 3 ☐ No	101

[IF NO, Skip to Part II, page 16]

SECTION A BROODSTOCK and SPAWNING MANAGEMENT

1. Did this operation breed catfish for egg collection in 2009?	Code
1 ☐ Yes 3 ☐ No	102

[If NO, Skip to Section B]

2. On January 1, 2010, what was your inventory of broodstock (fish to be used for breeding)?	Number of Broodstock
	103

3. Of the January 1 broodstock inventory (Item 2), what percentage was from the following lines?	Percent
a. NWAC103	104 %
b. Kansas	105 %
c. Goldkist/Harvest Select	106 %
d. Auburn	107 %
e. Blue catfish	108 %
f. Other channel catfish line (specify _____)	109 %
g. Pond run fish (fish selected from foodsize fish production ponds)	110 %
TOTAL	**100%**

4. Of the January 1 broodstock inventory (Item 2), what percentage was in the following age categories?	Percent
a. Less than 3 years old	111 %
b. 3 – 4 years old	112 %
c. 5 years old	113 %
d. 6 years old	114 %
e. More than 6 years old	115 %
TOTAL	**100%**

Now I want to ask questions about your broodstock during 2009

		Percent
5.	During 2009, what percentage of your broodstock was culled?	116 %

[If NONE, Skip to Item 7]

		Percent
6.	Of the broodstock that were culled in 2009 (Item 5), what percentage was culled primarily due to:	
a.	Old age (too old)?	117 %
b.	Weight?	118 %
c.	Poor health?	119 %
d.	Poor reproductive success?	120 %
e.	Business or financial reasons?	121 %
f.	Poor appearance (conformation problems)?	122 %
	TOTAL	**100%**

		Number
7.	During 2009, how many broodstock were lost on this operation due to disease, predation, or other problems?	123

[If NONE, Skip to Item 9]

		Percent
8.	Of the broodstock lost in 2009 (Item 7), what percentage was lost to:	
a.	Enteric septicemia (ESC, hole-in-head disease)?	124 %
b.	Columnaris?	125 %
c.	Proliferative gill disease (PGD, hamburger gill disease)?	126 %
d.	Winter kill (fungus- Saprolegnia)?	127 %
e.	Visceral toxicosis of catfish (Spring disease)?	128 %
f.	Fighting?	129 %
g.	Predation?	130 %
h.	Other known causes? (specify _____)	131 %
i.	Unknown causes?	132 %
	TOTAL	**100%**

9. How often are broodstock usually fed during the following seasons?

	Daily	Every other day	Every third day	Less often than every third day	Other (specify)	Code
a. Spring/early summer (pre-spawning/spawning)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐ _____	133
b. Mid-summer/fall (post-spawning)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐ _____	134
c. Winter	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐ _____	135

10. What percent protein feed was primarily fed to your broodstock in 2009?

	Code
a. 28 percent	1
b. 32 percent	2
c. 35 percent	3
d. Other percent protein (specify: _____)	4

(Enter Code) 136

11. Does this operation stock forage fish in broodstock ponds as a supplemental food source for broodstock? 1 ☐ Yes 3 ☐ No — Code 137

IF YES, which of the following species are stocked as food sources for broodstock?

			Code
a. Fathead minnows	1 ☐ Yes	3 ☐ No	138
b. Threadfin shad	1 ☐ Yes	3 ☐ No	139
c. Gizzard shad	1 ☐ Yes	3 ☐ No	140
d. Tilapia	1 ☐ Yes	3 ☐ No	141
e. Other (specify: _____)	1 ☐ Yes	3 ☐ No	142

Now I'd like to ask about your spawning management.

12. During 2009, how many spawning ponds were used by this operation? — Ponds 143

13. For spawning ponds, how many years do you usually wait between: — Number of years

a. Draining and drying your ponds? 144

b. Complete renovation? 145

14. How many pounds of broodstock per acre are put into spawning ponds on this operation? — Pounds per acre 146

15. What is the usual ratio of female to male broodstock used in this operation's spawning ponds? 1 to 1 ☐ (1) 2 to 1 ☐ (2) 3 to 1 ☐ (3) Other ratio ☐ (4) — Code 147

SECTION B HATCHERY MANAGEMENT

1. Does this operation have a hatchery for hatching catfish eggs? 1 ☐ Yes 3 ☐ No — Code 201

[IF NO, Skip to Section C, page 8]

2. Did this hatchery produce any catfish fry in 2009? 1 ☐ Yes 3 ☐ No — Code 202

[IF NO, Skip to Section C, page 8]

3. During 2009, how many egg masses, and if available, how many pounds of eggs, were brought to the hatchery for hatching?

	Number of egg masses
a. Number of egg masses.	203

	Lbs. of eggs
b. Pounds of eggs.	204

4. Which of the following best describes the treatment of egg masses before being placed into hatching troughs?

	Code		
a. Treat egg masses using betadyne (iodine compounds).	1		
b. Treat egg masses using other compound (specify: _____)	2	(Enter Code)	205
c. Do not treat egg masses.	3		

5. What is the primary source of water for the hatchery?

	Code		
a. Water from a well that was stored in a holding pond.	1		
b. Water from a creek or a watershed that was stored in a holding pond.	2	(Enter Code)	206
c. Water directly from a well (ask Item 6)..	3		
d. Mixture of water directly from a well and from a holding pond.	4		
e. Other (specify_____)	5		

[IF ITEM 5 DOES NOT EQUAL C, Skip to Item 7.]

6. Before the water is used in the hatchery is it:

			Code
a. Degassed?.	1 ☐ Yes	3 ☐ No	207
b. Heated?.	1 ☐ Yes	3 ☐ No	208

	Gals per min
7. On average, how many gallons of water per minute flow through each hatching trough?.	209

8. Do you use the following methods to keep water circulating in:

	Hatching troughs?	Code	Fry troughs?	Code
a. Paddles?.	1 ☐ YES 3 ☐ NO	210	1 ☐ YES 3 ☐ NO	214
b. Air stones?.	1 ☐ YES 3 ☐ NO	211	1 ☐ YES 3 ☐ NO	215
c. Agitators?.	1 ☐ YES 3 ☐ NO	212	1 ☐ YES 3 ☐ NO	216
d. Other methods?.	1 ☐ YES 3 ☐ NO	213	1 ☐ YES 3 ☐ NO	217

	PPM
9. What is the hardness of the water, in parts per million, used in the hatchery?	218

	Code
10. During 2009, did this operation add calcium to the water to maintain hardness? 1 ☐ Yes 3 ☐ No	219

	Code
11. Does this operation use liquid oxygen in the hatchery to control dissolved oxygen? 1 ☐ Yes 3 ☐ No	220

	Masses per 100 gallons
12. How many egg masses per hundred gallons were placed in hatching troughs in 2009?	221

	Times per day
13. During 2009, how many times per day were egg masses in hatching troughs turned?	222

	Percent
14. What percentage of eggs brought to the hatchery survived to hatching in 2009?	223 %

15. Of the eggs that did not hatch, what percentage were lost to the following causes?	Percent
a. Fungal infections	224 %
b. Bacterial egg rot (or other bacterial infections)	225 %
c. Infertility	226 %
d. Other known causes (specify: _____)	227 %
e. Unknown causes	228 %
TOTAL	**100%**

16. During 2009, were any of the following chemicals used to **prevent** fungal or bacterial infections in eggs in hatching troughs, and if so, how many times per day were eggs treated?

		Code	If yes, # times per day
a. Betadyne (iodine)	1 ☐ YES 3 ☐ NO	229	234
b. Copper Sulfate	1 ☐ YES 3 ☐ NO	230	235
c. Formalin	1 ☐ YES 3 ☐ NO	231	236
d. Hydrogen peroxide	1 ☐ YES 3 ☐ NO	232	237
e. Salt	1 ☐ YES 3 ☐ NO	233	238

17. During 2009, were any of the following chemicals used to **treat** eggs that had:

	Fungal infections?	Code	Bacterial infections?	Code
a. Betadyne (iodine)	1 ☐ YES 3 ☐ NO	239	1 ☐ YES 3 ☐ NO	244
b. Copper Sulfate	1 ☐ YES 3 ☐ NO	240	1 ☐ YES 3 ☐ NO	245
c. Formalin	1 ☐ YES 3 ☐ NO	241	1 ☐ YES 3 ☐ NO	246
d. Hydrogen peroxide	1 ☐ YES 3 ☐ NO	242	1 ☐ YES 3 ☐ NO	247
e. Salt	1 ☐ YES 3 ☐ NO	243	1 ☐ YES 3 ☐ NO	248

Now I'm going to ask questions about your fry management.

	Number
18. During 2009, how many fry were hatched in this operation's hatchery?	249

OF THESE FRY HATCHED, what percentage were:	Percent
a. channel catfish?	250 %
b. channel/blue hybrid catfish?	251 %
c. blue catfish?	252 %
TOTAL	**100%**

19. How long were fry normally left in fry troughs during 2009?

	Code
a. Release sac fry (not held in fry troughs)	1
b. 1 – 3 days past swim up	2
c. 4 – 7 days past swim up	3
d. More than 7 days past swim up	4

(Enter Code) 253

20. What was the primary feed fed to fry in fry troughs during 2009?

	Code
a. Catfish starter	1
b. Salmon/trout starter	2
c. Krill	3
d. Other (specify _____)	4
e. Nothing fed to fry in fry troughs	5

(Enter Code) 254

[IF ITEM 20 = E (nothing fed), Skip to Item 22]

	Number
21. In a 24-hour period, how many times were fry in fry troughs fed?	255

22. Which of the following best describes how often fry troughs are disinfected?

	Code		
a. Between batches of fry	1		
b. Annually	2	(Enter Code)	256
c. Other	3		
d. Do not disinfect	4		

23. What percentage of the fry produced by this operation in 2009 were:	Percent
a. Sold?	257 %
b. Stocked on your own operation?	258 %
TOTAL	**100%**

SECTION C FRY/FINGERLING MANAGEMENT

	Code
1. During 2009, did your operation grow any fry to fingerlings? 1 ☐ Yes 3 ☐ No	301

[If NO, Skip to Part II, page 16]

	Code
2. During 2009, did your operation place swim-up fry in raceways or tanks after fry troughs but prior to stocking them into fry/fingerling ponds? 1 ☐ Yes 3 ☐ No	302

	Days
If YES, what was the average age of the fry, in days since hatching, when they were moved from the raceway or tank to the fry/fingerling ponds?	303

	Ponds
3. During 2009, how many fry/fingerling ponds were used for production on this operation?	304

	Acres
a. What was the total water surface acres of the ponds that were used for fingerling production in 2009?	305

	Ponds
4. Of these fry/fingerling ponds (Item 3) how many were stocked with **fry hatched in 2009**?	306

	Acres
a. What was the total water surface acres of the ponds that were stocked with **fry hatched in 2009**?	307

5. How many fry were stocked into fry/fingerling ponds on this operation during:	Fry Stocked
a. 2008?	308
b. 2009?	309

6. During 2009, how many of the fry/fingerling ponds were stocked at the following rates?	Number of Ponds
a. Less than 100,000 fry per acre	310
b. 100,000 – 149,000 fry per acre	311
c. 150,000 – 199,000 fry per acre	312
d. 200,000 or more fry per acre	313
e. TOTAL [should equal Item 4]	314

7. Which of the following best describes the treatment of fry/fingerling ponds before stocking in 2009?

	Code
a. Drained and dried [ask Item 8]	1
b. Drained and poisoned [ask Item 8]	2
c. Poisoned but not drained	3
d. Neither drained nor poisoned	4
e. Other (specify: _____)	5

(Enter Code) 315

[IF ITEM 7 DOES NOT EQUAL A or B, Skip to Item 9]

	Days
8. How many days do you normally wait between filling fry/fingerling ponds with water and stocking fry?	316

	Years
9. How many years do you normally wait between completely renovating fry/fingerling ponds?	317

10. Did you fertilize this operation's fry/fingerling ponds in 2009?. . . . . 1 ☐ Yes 3 ☐ No

Code
318

[IF NO, Skip to Item 13]

11. How many days before stocking fry/fingerling ponds did you begin fertilizing the ponds?. . . . . .

Days
319

12. Which of the following best describes the primary fertilizer used in the fry/fingerling ponds?

	Code
a. Organic fertilizer (e.g. cottonseed, fish feed).	1
b. Inorganic fertilizer (e.g. urea, ammonia nitrate).	2
c. Combination of organic/inorganic fertilizers.	3

(Enter Code) 320

13. After filling the fry/fingerling ponds with water, were any of the ponds treated to control insects in 2009?. . . . . 1 ☐ Yes 3 ☐ No

Code
321

14. In parts per million, what was the average chloride level of the water in fry/fingerling ponds on this operation during summer?. . . . . .

PPM
322

15. Which of the following best describes the use of salt in fry/fingerling ponds on this operation during 2009?

	Code
a. Routinely add salt to maintain a desired chloride level.	1
b. Add salt only in response to health problems.	2
c. Do not add salt to fry/fingerling ponds.	3

(Enter Code) 323

Now I want to ask you questions about fry/fingerling pond management after stocking with fry.

16. During 2009, which type of feed was primarily fed to fry before the acceptance of floating feeds?

	Code
a. Fines or meals.	1
b. Crumbles.	2
c. Pellets.	3
d. Fry starter.	4
e. Other (specify: _____)	5
f. No feed provided.	6

(Enter Code) 324

17. During 2009, how often were fry/fingerlings usually fed in the following seasons?

	At least twice daily	Once a day	Every other day	Other (specify)	Code
a. Spring	1 ☐	2 ☐	3 ☐	4 ☐ _____	325
b. Summer	1 ☐	2 ☐	3 ☐	4 ☐ _____	326
c. Fall	1 ☐	2 ☐	3 ☐	4 ☐ _____	327
d. Winter	1 ☐	2 ☐	3 ☐	4 ☐ _____	328

18. What percent protein floating feed was primarily fed to fry/fingerlings in 2009?

	Code
a. 28 percent	1
b. 32 percent	2
c. 35 percent	3
d. Other level (specify: _____)	4

(Enter Code) 329

19. Which of the following best describes your primary method for regularly monitoring dissolved oxygen in fry/fingerling ponds during 2009?

	Code
a. Automated sensors	1
b. Hand monitor (oxygen meter)	2
c. Other (specify: _____)	3
d. Do not regularly monitor dissolved oxygen levels	4

(Enter Code) 330

Horsepower
331

20. How many horsepower of **fixed** aeration were used **per surface acre** of fry/fingerling ponds?

21. Which of the following best describes the frequency of water quality testing in fry/fingerling ponds in 2009?

	Code
a. At least once a month [ask Item 22]	1
b. Less than once a month	2
c. In response to health problems only	3
d. Not tested	4

(Enter Code) 332

[IF ITEM 21 DOES NOT EQUAL A, Skip to Item 23]

22. How many times per month were fry/fingerling ponds tested for the following water quality characteristics?

	Times per month
a. Ammonia	333
b. Chloride	334
c. Nitrite	335

Now I'm going to ask questions about fingerling health issues.

23. At this operation during 2009, were any fry vaccinated against enteric septicemia of catfish (ESC)? 1 ☐ Yes 3 ☐ No — Code 336

[If NO, Skip to Item 30]

24. What percentage of fry was vaccinated for ESC in 2009? — Percent 337 %

25. How many days after hatching were the fry usually vaccinated for ESC? — Days 338

26. Which of the following best describes how many of the fry **intended for grow-out** on your own operation were vaccinated against ESC during 2009?

	Code
a. All fry intended for grow out on operation	1
b. A portion of the fry	2
c. None of the fry	3
d. No fry were grown-out on this operation	4

(Enter Code) 339

27. How many of the fry **intended for sale** as fingerlings were vaccinated against ESC during 2009?

	Code
a. All fry intended for sale	1
b. A portion of the fry for sale based on customer request	2
c. A portion of the fry for sale regardless of customer request	3
d. None of the fry intended for sale were vaccinated	4
e. No fry were for sale	5

(Enter Code) 340

28. During 2009, did you have any outbreaks of ESC in ponds that had fingerlings vaccinated for ESC? . . . . . 1 ☐ Yes 3 ☐ No — Code 341

IF YES, was any medicated feed fed to these vaccinated fish? . . . . . 1 ☐ Yes 3 ☐ No — Code 342

29. Would you say that the performance of fingerlings in the ponds with ESC vaccinated fish, when compared to fingerlings in ponds without ESC vaccinated fish, was better, the same, or worse for:

	Better	Same	Worse	Don't Know	Code
a. **SURVIVAL** rates?	1 ☐	2 ☐	3 ☐	4 ☐	343
b. **GROWTH** rates?	1 ☐	2 ☐	3 ☐	4 ☐	344

I am now going to ask similar questions about columnaris vaccination.

30. At this operation during 2009, were any fry vaccinated against columnaris. . . . . 1 ☐ Yes 3 ☐ No — Code 345

[IF NO, Skip to Item 37]

31. What percentage of fry were vaccinated for columnaris in 2009? . . . . . Percent 346 %

32. How many days after hatching were the fry usually vaccinated for columnaris? . . . . . Days 347

33. Which of the following best describes how many of the fry **intended for grow-out** on your own operation were routinely vaccinated against columnaris during 2009?

	Code
a. All fry intended for grow out on operation.	1
b. A portion of the fry.	2
c. None of the fry.	3
d. No fry were grown-out on this operation.	4

(Enter Code) 348

34. How many of the fry **intended for sale** as fingerlings were vaccinated against columnaris during 2009?

	Code
a. All fry intended for sale.	1
b. A portion of the fry for sale based on customer request.	2
c. A portion of the fry for sale regardless of customer request.	3
d. None of the fry intended for sale.	4
e. No fry were for sale.	5

(Enter Code) 349

	Code
35. During 2009, did you have any outbreaks of columnaris in ponds that had fingerlings that were vaccinated for columnaris?. . . . . 1 ☐ Yes 3 ☐ No	350
IF YES, was any medicated feed fed to these vaccinated fish?. . . . . 1 ☐ Yes 3 ☐ No	351

36. Would you say that the performance of fingerlings in the ponds with columnaris vaccinated fish, when compared to fingerlings in ponds without columnaris vaccinated fish, was better, the same, or worse for:

	Better	Same	Worse	Don't Know	Code
a. **SURVIVAL** rates?.	1 ☐	2 ☐	3 ☐	4 ☐	352
b. **GROWTH** rates?	1 ☐	2 ☐	3 ☐	4 ☐	353

	Percent
37. During 2009, what percentage of stocked fry **survived** until harvested as fingerlings?.	354 %

38. Of the fry stocked in 2009 that did not survive to harvest as fingerlings, what percentage was lost to:	Percent
a. Enteric septicemia (ESC, hole-in-head disease)?.	355 %
b. Columnaris?.	356 %
c. Proliferative gill disease (PGD, hamburger gill disease)?	357 %
d. Channel catfish virus?.	358 %
e. Trematodes?.	359 %
f. Gill parasites?.	360 %
g. Ich?.	361 %
h. Predation?.	362 %
i. Other known causes? (specify _____)	363 %
j. Unknown causes?.	364 %
TOTAL.	**100%**

39. During 2009, were any fingerlings sent to a diagnostic laboratory for any of the following reasons:

			Code
a. Early problem detection?	1 ☐ Yes	3 ☐ No	365
b. Confirming cause of disease?	1 ☐ Yes	3 ☐ No	366
c. Identifying unknown disease?	1 ☐ Yes	3 ☐ No	367
d. Other reasons? (specify: _____)	1 ☐ Yes	3 ☐ No	368

40. Which of the following best describes your primary treatment for fry/fingerlings with ESC?

	Code
a. Medicated feed	1
b. Regular feed or alternate days (reduce feed)	2
c. Take off feed	3
d. Other (specify: _____)	4
e. No ESC outbreaks	5

(Enter Code) 369

41. During 2009, did this operation feed any medicated feed to fry/fingerlings? 1 ☐ Yes 3 ☐ No — Code 370

IF YES, how many tons of the following medicated feed were fed to fry/fingerlings in 2009?

	Tons
a. Feed with Terramycin	371
b. Feed with Romet	372
c. Feed with Aquaflor	373

42. During 2009, did you have a problem with snails in any of your fry/fingerling ponds? 1 ☐ Yes 3 ☐ No — Code 374

Did you use any of the following measures to control the snails in the fry/fingerling ponds?

			Code
a. Lime	1 ☐ Yes	3 ☐ No	375
b. Copper	1 ☐ Yes	3 ☐ No	376
c. Weed control	1 ☐ Yes	3 ☐ No	377
d. Biological control	1 ☐ Yes	3 ☐ No	378
e. Other (specify: _____)	1 ☐ Yes	3 ☐ No	379

PART II: FOODSIZE FISH PRODUCTION

NOTE: Part II refers to foodsize fish production. All references to ponds and fish relate to production of foodsize fish for harvest.

During 2009, did this operation grow any foodsize fish for harvest?. . . . . 1 ☐ Yes 3 ☐ No

Code
401

[IF NO FOODSIZE FISH, Skip to Part III, page 28]

SECTION A STOCKING MANAGEMENT

1. On January 1, 2010, what was your inventory of:

		Number of Fingerlings
a. Fingerlings? (under 60 lb/1000 fish).	+	402
b. Stockers? (60 – 750 lb/1000 fish)	+	Number of Stockers: 403
c. Foodsize? (3/4 lb or more)	+	Number of Foodsize: 404
Then your total inventory of fingerling, stocker, and foodsize fish on January 1, 2010, was:	=	Total: 405

2. What percentage of the January 1 inventory (Item 1) was from the following lines:

	Percent
a. NWAC103?	409 %
b. Kansas?	410 %
c. Goldkist/Harvest Select?	411 %
d. Auburn?	412 %
e. Channel/blue hybrid catfish?	413 %
f. Other line (specify _____)	414 %
g. Unknown line.	415 %
TOTAL.	**100%**

	Percent
3. What percentage of the January 1 inventory (Item 1) was stocked in 2009?.	416 %

4. What percentage of the fish stocked into foodsize fish ponds in 2009 was:

	Percent
a. Purchased as fry from another operation?	417 %
b. Purchased as fingerlings from another operation?	418 %
c. Produced by this operation?	419 %
TOTAL	**100%**

5. For this operation, what is the **most important reason** for selecting fingerlings or stockers?

	Code
a. Price	1
b. Growth characteristics	2
c. Disease resistance	3
d. Fish size	4
e. Distance from source (supplier)	5
f. Producer's reputation	6
g. Other? (specify: _____)	7

(Enter Code) 420

6. What percentage of the fish stocked in foodsize fish ponds during 2009 were in the following size groups:

	Percent
a. 5 inches or less (less than 40 lb/1000 fish)?	421 %
b. 6 – 8 inches (40 – 70 lb/1000 fish)?	422 %
c. More than 8 inches (over 70 lb/1,000 fish)?	423 %
TOTAL	**100%**

	Fish per acre
7. How many fish per acre are usually stocked in foodsize fish ponds?	424

8. During 2009, what percentage of the fingerlings were stocked directly into:

	Percent
a. Foodsize fish ponds that already contain fish (understocking)? [ask Item 9]	425 %
b. Foodsize fish ponds empty of fish?	426 %
c. Stocker ponds?	427 %
TOTAL	**100%**

[IF ITEM 8a IS 0, Skip to Item 10]

9. What was the average number of fish per acre, including newly stocked fish and carry-over fish, in ponds that were understocked?	Fish per acre
	428

10. Do you ever stock any of the following species into ponds used for foodsize fish?

			Code
a. Threadfin shad	1 ☐ Yes	3 ☐ No	429
b. Gizzard shad	1 ☐ Yes	3 ☐ No	430
c. Redear sunfish (shellcrackers)	1 ☐ Yes	3 ☐ No	431
d. Fathead minnows	1 ☐ Yes	3 ☐ No	432
e. Grass carp	1 ☐ Yes	3 ☐ No	433
f. Other species (specify: _____)	1 ☐ Yes	3 ☐ No	434

SECTION B POND CHARACTERISTICS

1. During 2009, how many foodsize fish ponds were used for production on this operation?	Ponds
	501

2. How many surface water acres were in those ponds?	Acres
	502

Of those ponds (Item 2), how many surface water acres were used for:	Acres
a. channel catfish?	503
b. channel/blue hybrid catfish?	504
TOTAL [should equal Item 2]	505

3. During 2009, how many or what percentage of this operation's foodsize fish ponds were in the following surface acre categories?

	Number of ponds	OR	Percent of ponds
a. Less than 5 acres	506		511 %
b. 5 – 9 acres	507		512 %
c. 10 – 15 acres	508		513 %
d. More than 20 acres	509		514 %
e. **TOTAL** [should equal Item 1 or 100%]	510		**100%**

4. Of those foodsize fish ponds used in 2009, how many foodsize fish ponds have the following water sources?

	Ponds
a. Well (levee pond)	515
b. Surface water (watershed pond, stream, spring)	516
c. Other (specify: _____)	517
TOTAL [should equal Item 1]	518

5. Considering all of the foodsize fish ponds on your operation in 2009, what was the:

	Feet
a. Average pond depth?	519
b. Maximum pond depth?	520

6. Does this operation use the following measures for erosion control or improving vehicle access?

			Code
a. Vegetation on levee sides	1 ☐ Yes	3 ☐ No	521
b. Gravel on levee tops and/or sides	1 ☐ Yes	3 ☐ No	522

7. For the foodsize fish ponds, how many years do you usually wait between:

	Years
a. Draining your ponds?	523
b. Complete renovation?	524

8. Which of the following best describes how foodsize fish pond water levels are managed in the fall?

	Code
a. Release water to lower level	1
b. Allow level to drop without intervention	2
c. Maintain water level (do not let water level drop)	3

(Enter Code) 525

9. Which of the following was your primary method for regularly monitoring dissolved oxygen in foodsize fish ponds during 2009?

	Code
a. Automated sensors	1
b. Hand monitor (oxygen meter)	2
c. Other (specify: _____)	3
d. Do not regularly monitor dissolved oxygen levels	4

(Enter Code) 526

10. How many horsepower of **fixed** aeration were used **per surface acre** of foodsize fish ponds?

Horsepower
527

Now I want to ask questions about water quality and treatment

11. What was the average chloride level, in parts per million, of the water in foodsize fish ponds on this operation during the summer? . . . . . .

PPM
528

12. Which of the following best describes the use of salt in foodsize fish ponds on this operation during 2009?

	Code
a. Routinely add salt to maintain a desired chloride level.	1
b. Add salt only in response to health problems.	2
c. Do not add salt to ponds.	3

(Enter Code) 529

13. What is the alkalinity of the water, in parts per million, used in the foodsize fish ponds on this operation? . . . . . .

PPM
530

14. Which of the following best describes the use of calcium (ag lime, hydrated lime, or gypsum) in foodsize fish ponds on this operation?

	Code
a. Routinely add calcium to maintain a desired alkalinity and hardness.	1
b. Add calcium only in response to health problems.	2
c. Do not add calcium to foodsize fish ponds.	3

(Enter Code) 531

15. Which of the following best describes the frequency of water quality testing in foodsize fish ponds on this operation in 2009?

	Code
a. At lease once a month [ask Item16].	1
b. Less than once a month.	2
c. In response to health problems only.	3
d. Not tested.	4

(Enter Code) 532

[IF ITEM 15 DOES NOT EQUAL A, Skip to Item 17]

16. How many times per month were foodsize fish ponds tested for the following water quality characteristics?

	Times per month
a. Ammonia.	533
b. Chloride.	534
c. Nitrite.	535

17. Which of the following best describes how this operation manages algae?

	Code
a. Prevent algae overgrowth with a control program [ask Item 18].	1
b. Control bloom only in response to problems such as off-flavor.	2
c. No algae control treatments.	3

(Enter Code) 536

[IF ITEM 17 DOES NOT EQUAL A, Skip to Section C]

	Ponds
18. During 2009, how many ponds were included in the algae control program?.	537

19. During 2009, did you use the following methods to control algae?

			Code
a. Copper sulfate ($CuSO_4$) or other copper formulation.	1 ☐ Yes	3 ☐ No	538
b. Diuron.	1 ☐ Yes	3 ☐ No	539
c. Biological control (i.e., Threadfin or gizzard shad).	1 ☐ Yes	3 ☐ No	540
d. Other (specify: _____)	1 ☐ Yes	3 ☐ No	541

[IF ITEM 19 A OR B DOES NOT EQUAL YES, Skip to Section C]

	Month
20. During 2009, in which month did you start algae control?.	542
21. During 2009, in which month did you end algae control?.	543

	Weeks
22. During 2009, how many weeks did you wait between algae control treatments?.	544

SECTION C FEEDING and HARVESTING PRACTICES

[Questions refer to foodsize fish feeding only.]

1. During 2009, how many tons of feed were fed to foodsize fish on your operation? . . . . . | Tons | 601 |

(If unknown, how many tons were purchased or delivered to the operation in 2009?)

2. What percentage protein feed was primarily fed to your foodsize fish in 2009?

	Code
a. 28 percent.	1
b. 32 percent.	2
c. 35 percent.	3
d. Other percent protein (specify: _____	4

(Enter Code) 602

3. During 2009, how many pounds of feed were fed per pound of fish harvested (feed conversion ratio)? . . . . . | Pounds | 603 |

4. During the following times of the year in 2009, what feeding method was most commonly used?

	Every day to satiation (all they can eat)	Every day but with a maximum feeding limit	Feed on alternate days to satiation	Feed on alternate days with a maximum feeding limit	Other	Code
a. March-April.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐ Specify_____	604
b. May-August.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐ Specify_____	605
c. September-October. .	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐ Specify_____	606

5. When feeding at a fixed rate, what percentage of fish body weight do you use to calculate the amount to feed? . . . . . | Percent body weight | 607 % |

6. During the winter (December through February), how many days per week do you feed your foodsize fish? [If no foodfish on hand in winter, enter 99]. . . . . | Days per week | 608 |

	Pounds per acre
7. During 2009, what was the **average** pounds per acre, per day, fed during the month with the highest feed usage?	609

	Pounds per acre
8. During 2009, what was the **highest** daily feeding rate, in pounds per acre, for any single foodsize fish pond on this operation?	610

9. For this operation, what is the **most important reason** for deciding which feed to buy?

	Code
a. Price	1
b. Quality such as premium, standard, economy	2
c. Past performance of feed on your operation	3
d. Reputation of the feed mill	4
e. Other (specify: _____)	5

(Enter Code) 611

The next 3 questions ask about channel and channel/blue hybrid catfish.

	Channel catfish	Channel/Blue Hybrid
10. During 2009, how many channel and channel/blue hybrid foodsize fish were harvested? Number	612	614
11. What was the total poundage? Pounds	613	615

12. During 2009, what percentage (by weight) of your channel and channel/blue hybrid foodsize fish harvest was from:	Channel catfish	Channel/Blue Hybrid
a. Multibatch production (understocking, topping, or continuous harvesting)?	616 %	619 %
b. Single batch (clean harvesting)?	617 %	620 %
c. Other? (specify: _____)	618 %	621 %
TOTAL	**100%**	**100%**

13. Which of the following best describes who primarily harvests foodsize fish on this operation?

	Code
a. Employees of this operation	1
b. Custom harvest crews	2
c. Processing plant harvest crew	3
d. Fee fishing (angling)	4
e. Other? (specify: _____)	5

(Enter Code) 622

SECTION D FOODSIZE FISH HEALTH AND PRODUCTION ISSUES

Now I'm going to ask questions about foodsize fish health issues.

1. During 2009, did this operation stock any fish vaccinated against enteric septicemia of catfish (ESC) into foodsize fish ponds?. . . . . 1 ☐ Yes 3 ☐ No

Code
701

[IF NO, Skip to Item 5]

2. In 2009, what percentage of fish that were stocked into foodsize fish ponds were vaccinated for ESC?. . . . . %

Percent
702 %

3. During 2009, did you have any ESC outbreaks in foodsize fish ponds that contained ESC vaccinated fish?. . . . . 1 ☐ Yes 3 ☐ No

Code
703

IF YES, was any medicated feed fed to these vaccinated fish?. . . . . 1 ☐ Yes 3 ☐ No

Code
704

4. Would you say that the performance of fish in the ponds with ESC vaccinated fish, when compared to fish in ponds without ESC vaccinated fish, was better, the same, or worse for:

	Better	Same	Worse	Don't Know	Code
a. SURVIVAL rates?.	1☐	2 ☐	3 ☐	4 ☐	705
b. GROWTH rates?.	1☐	2 ☐	3 ☐	4 ☐	706

Next, I'll be asking similar questions, but now regarding columnaris vaccinations.

5. During 2009, did this operation stock any fish vaccinated against columnaris into foodsize fish ponds?. . . . . 1 ☐ Yes 3 ☐ No

Code
707

[IF NO, Skip to Item 9]

6. In 2009, what percentage of fish that were stocked into foodsize fish ponds were vaccinated for columnaris. . . . . %

Percent
708 %

7. During 2009, did you have any columnaris outbreaks in foodsize fish ponds that contained columnaris vaccinated fish?. . . . . 1 ☐ Yes 3 ☐ No

Code
709

IF YES, was any medicated feed fed to these vaccinated fish?. . . . . 1 ☐ Yes 3 ☐ No

Code
710

8. Would you say that the performance of fish in the ponds with columnaris vaccinated fish, when compared to fish without columnaris vaccinated fish, was better, the same, or worse for:

	Better	Same	Worse	Don't Know	Code
a. SURVIVAL rates?.	1☐	2☐	3☐	4☐	711
b. GROWTH rates?.	1☐	2☐	3☐	4☐	712

9. What percentage of the foodsize fish to be **stocked in 2010** will be vaccinated for:

	Percent
a. ESC?.	713 %
b. Columnaris?.	714 %

I am now going to ask questions about losses due to disease, dissolved oxygen problems and predation on your operation in 2009.

10. For 2009, please estimate the number of ponds with major losses of at least 5 percent of inventory, as well as the number of acres represented by those ponds, and the pounds sold per acre in 2009.

	Major losses > 5% inventory	
a. Number of ponds with losses.	715	ponds
b. Number of acres in the ponds with losses. . .	716	acres
c. Pounds sold per acre from the ponds with losses.	717	lbs/acre

11. In ponds that did not have major losses in 2009, what was the average pounds sold per acre?. . . . .

Pounds per acre
718

12. During 2009, how many of your foodsize fish ponds had any of the following diseases? Of those, rate the severity of the loss during 2009 as **light** with less than 200 pounds, **moderate** with 200 – 2,000 pounds, or **severe** at greater than 2,000 pounds of loss.

Cause of Loss	**Number of Ponds**	**Average Loss per Outbreak** Light = < 200 lbs Moderate = 200 – 2,000 lbs Severe = > 2,000 lbs	Code
a. Enteric septicemia (ESC, hole-in-head disease)	719	1☐ Light 2☐ Moderate 3☐ Severe	720
b. Columnaris	721	1☐ Light 2☐ Moderate 3☐ Severe	722
c. Ich	723	1☐ Light 2☐ Moderate 3☐ Severe	724
d. Proliferative gill disease (PGD, hamburger gill disease)	725	1☐ Light 2☐ Moderate 3☐ Severe	726
e. Anemia (white lip, no blood)	727	1☐ Light 2☐ Moderate 3☐ Severe	728
f. Winter kill (fungus – Saprolegnia)	729	1☐ Light 2☐ Moderate 3☐ Severe	730
g. VTC (twisted gut, visceral toxicosis, butulism)	731	1☐ Light 2☐ Moderate 3☐ Severe	732
h. Trematodes	733	1☐ Light 2☐ Moderate 3☐ Severe	734
i. Predation (birds or other animals)	735	1☐ Light 2☐ Moderate 3☐ Severe	736
j. Low dissolved oxygen	737	1☐ Light 2☐ Moderate 3☐ Severe	738
k. Other known causes? (specify _____)	739	1☐ Light 2☐ Moderate 3☐ Severe	740

13. If your operation grows both channel catfish and channel/blue hybrids, how would you compare their resistance (ability to avoid disease) to the following diseases?

1 = Channels more resistant 2 = Hybrids more resistant 3 = No difference 4 = Don't know

	Code
a. Enteric septicemia (ESC, hole-in-head disease)	741
b. Columnaris	742
c. Proliferative gill disease (PGD, hamburger gill disease)	743
d. Edwardsiella tarda	744

14. In 2009, did you have any weigh backs due to:

			Code
a. red flesh in fish?	1 ☐ Yes	3 ☐ No	745
b. yellow flesh in fish?	1 ☐ Yes	3 ☐ No	746

15. In the past 3 years has this operation had fish health problems related to algal toxins? 1 ☐ Yes 3 ☐ No — Code 747

16. During 2009, did you have a problem with snails in any of your foodsize fish ponds? 1 ☐ Yes 3 ☐ No — Code 748

Did you use any of the following measures to control snails in foodsize fish ponds?

			Code
a. Lime	1 ☐ Yes	3 ☐ No	749
b. Copper	1 ☐ Yes	3 ☐ No	750
c. Weed control	1 ☐ Yes	3 ☐ No	751
d. Biological control	1 ☐ Yes	3 ☐ No	752
e. Other (specify_____)	1 ☐ Yes	3 ☐ No	753

17. During 2009, did this operation feed any medicated feed to foodsize fish? 1 ☐ Yes 3 ☐ No — Code 754

18. **IF YES**, how many tons of the following medicated feed were fed to fish in foodsize fish ponds during 2009?

	Tons
a. Feed with Terramycin	755
b. Feed with Romet	756
c. Feed with Aquaflor	757

19. During 2009, were any foodsize fish submitted to a diagnostic laboratory for the following reasons?

			Code
a. Early problem detection	1 ☐ Yes	3 ☐ No	758
b. Confirming cause of disease	1 ☐ Yes	3 ☐ No	759
c. Identifying unknown disease	1 ☐ Yes	3 ☐ No	760
d. Other reasons (specify: _____)	1 ☐ Yes	3 ☐ No	761

20. During 2009, did you have any fish mortalities primarily due to Aeromonas that were diagnosed by a diagnostic laboratory? 1 ☐ Yes 3 ☐ No 5 ☐ No lab submissions

Code
762

[IF ANY RESPONSE IN ITEM 19 EQUALS YES, Skip to Item 22]

21. Which of the following was the primary reason that you did not submit any foodsize fish samples to a diagnostic laboratory during 2009?

	Code
a. Inconvenient	1
b. Information rarely of use (does not help control disease)	2
c. Already knew what the disease was	3
d. No substantial disease problems	4
e. Other (specify: _____)	5

(Enter Code) 763

Now I'd like to ask questions about off-flavor.

22. During 2009, from how many ponds were any foodsize fish harvested?

Ponds
764

[IF NONE, Skip to Part III]

23. During 2009, how many ponds had off-flavor problems that delayed the planned harvest date?

Ponds
765

[IF NONE, Skip to Part III]

24. How many of the off-flavor harvest-delayed ponds were treated with the following?	Ponds
a. Diuron only	766
b. Copper sulfate only	767
c. Both Diuron and copper sulfate	768
d. No treatment	769
TOTAL [should equal Item 23]	770

25. How many days was the planned harvest date delayed because of off-flavor:	Days
a. On the pond with the shortest delay?	771
b. On the pond with the longest delay? [Enter 999 if ongoing]	772
c. What was the average delay during 2009 on this operation?	773

PART III: GENERAL BACKGROUND

If neither fingerlings nor foodsize fish were raised on this operation during 2009, go to Part IV on the next page and code the operation as "No catfish" or "Out of Business".

1. Does this operation keep written or computerized records related to:			Code
a. Stocking?	1 ☐ YES	3 ☐ NO	801
b. Harvesting?	1 ☐ YES	3 ☐ NO	802
c. Disease?	1 ☐ YES	3 ☐ NO	803
d. Feeding?	1 ☐ YES	3 ☐ NO	804
e. Water quality?	1 ☐ YES	3 ☐ NO	805
f. Breeding?	1 ☐ YES	3 ☐ NO	806
g. Other (specify: _____)	1 ☐ YES	3 ☐ NO	807

2. How many emergency aerators (power take-off or PTOs) are available for use on this operation?	Number
	808

3. If you were to stock fingerlings vaccinated against ESC or columnaris, at least what percent of the vaccinated fish would you expect to be protected from the disease?	Percent
	809 %

PART IV: CONCLUSION

ENTER INTERVIEW RESPONSE CODES

[1] No catfish on January 1, 2009, not eligible for this survey.

[2] Out of business.

[3] Refusal of General Catfish Management Report.
[Check reason under Enumerator Note below.]

Code
9001

[4] Complete.

[7] Out of scope for General Catfish Management Report.

[9] Inaccessible.

(ENUMERATOR NOTE; If Code 3, then select the code below that best fits)

[1] Does not want to commit time to the project.

[2] Does not want involvement with government program.

[3] Does not have necessary records available.

Code
9002

[4] Has participated in too many surveys.

[6] A bad time of year (planting, harvesting, second job, etc.).

[8] Believes that surveys and reports hurt the farmer more than help.

[10] No reason given, or other miscellaneous reasons.

Ending Time
9003
___ ___ ___ ___

ENDING TIME [MILITARY]. . . . . .

For Office Use Only								
Response		**Respondent**		**Mode**		**R Unit**	**Enum.**	**Eval.**
1-Comp 2-R 3-Inac 4-Office Hold 5-R – Est 6-Inac – Est 7-Off Hold – Est 8-Known Zero	9901	1-Op/Mgr 2-Sp 3-Acct/Bkpr 4-Partner 9-Oth	9902	1-Mail 2-Tel 3-Face-to-Face 4-CATI 5-Web 6-e-mail 7-Fax 8-CAPI 19-Other	9903	0921	098	100