

## HACCP Step 1 – Activity Description

<b>Activity Description</b>	
Facility: Tishomingo National Fish Hatchery	Site: Tishomingo National Fish Hatchery
Project Coordinator: Kerry Graves	<b>Activity: Channel Catfish Production</b>
Site Manager: Kerry Graves	
Address: 5503 W. Hwy 7 Tishomingo, OK 74530	
Phone: (580) 384-5463	

### **Project Description**

i.e. Who; What; Where; When; How; Why

The Tishomingo National Fish Hatchery (TNFH) raises and stocks channel catfish into various ponds and lakes on NWRs, military bases and Indian tribal lands within Oklahoma and Texas annually. The hatchery raises additional channel catfish for an annual kids fishing derby that occurs onsite in the summer time. The TNFH also cultures catfish occasionally to meet commitments made with the Oklahoma Department of Wildlife Conservation (ODWC) for stocking channel catfish for recreational purposes across the state of Oklahoma.

Spawning cans are placed in broodstock earthen ponds in late spring. Hatchery personnel check cans daily for egg masses. The eggs are moved to the holding house and fingerlings hatch out within seven days. Channel catfish fry are transferred to 10 foot raceways. As the catfish grow they are eventually moved outside to designated channel catfish ponds. The primary water source at TNFH is from Pennington Creek. Creek water is piped to all raceways, tanks and ponds from a gravity fed diversion canal. Catfish are raised on pellet feed until they are ready to be stocked into their designated receiving waters. The ODWC picks up one year old and younger channel catfish to be stocked in waters around the state. All catfish stocked by the TNFH in Oklahoma and Texas waters are transported in a 450 gallon fish distribution truck. At the stocking location, water is bucketed or pumped from the lake or pond into the tank to acclimate fish to the lake water temperature. Fish are then netted out of the tank, and (or) released through a 5.5 inch opening in the rear of the tank. All water in the tank is drained at the pond or lake being stocked.

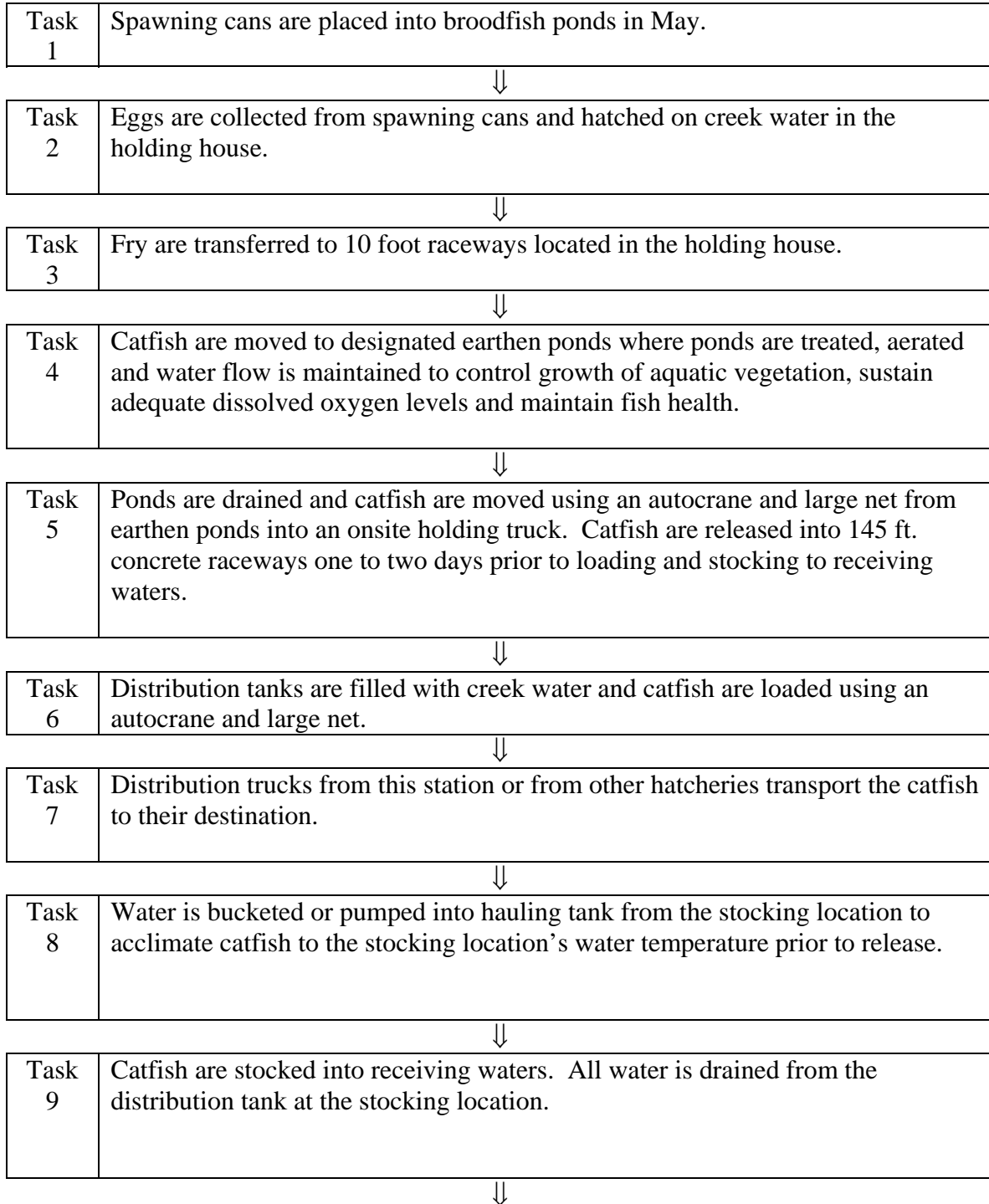
## HACCP Step 2 – Identify Potential Hazards

(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

<b>Hazards: Species Which May Potentially Be Moved/Introduced</b>
Vertebrates: black bullhead, black redhorse, golden shiner, goldfish, logperch, mosquitofish, largemouth bass, smallmouth bass, spotted bass, sunfish (bluegill, green, longear, orange spotted, redear), tadpoles, turtles, and bull frogs
Invertebrates: Asian clams, crayfish, fairy shrimp, tadpole shrimp, various aquatic invertebrate larvae
Plants: Arrowhead, bulrush, cattails, coontail, elodea, kera, pithophera, potamogeton spp., najas, naiads, smartweed, spatterdock, willows and other non-target vegetation
Other Biologics (e.g. disease, pathogen, parasite): Largemouth bass virus (Ranavirus) and Common parasites found on warm-water species: Trichodina, Costia, White and Yellow Grub, Ambiphyra, Cleidodiscus and Ichthyophthirius
Others (e.g. construction materials, etc.): None

### HACCP Step 3 – Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project  
Described in HACCP Step 1 – Activity Description  
(to be transferred to column 1 of the HACCP Step 4 – Hazard Analysis Worksheet)



### HACCP Step 4 – Hazard Analysis Worksheet

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<b>Task 1</b> Spawning cans are placed into broodfish ponds in May.	Vertebrates	No	Spawning cans are properly maintained and stored before placed in ponds	None	No
	Invertebrates	"	"	"	"
	Plants	"	"	"	"
	Others	"	"	"	"

<b>Task 2</b> Eggs are collected from spawning cans and hatched on creek water in the holding house.	Vertebrates	No	Vertebrates are graded out at a later step	None	No
	Invertebrates	"	Invertebrates are graded out at a later step	"	"
	Plants	"	Plant material is graded out at a later step	"	"
	Others	"	Possibility of other biologics being transferred are minimized at a later step	"	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<b>Task 3</b> Fry are transferred to 10 foot raceways located in the holding house.	Vertebrates	No	Catfish fry are held under controlled conditions in the holding house	None	No
	Invertebrates	"	"	"	"
	Plants	"	"	"	"
	Others	"	"	"	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<p><b>Task 4</b> Catfish are moved to designated earthen ponds where ponds are treated, aerated and water flow is maintained to control growth of aquatic vegetation, sustain adequate dissolved oxygen levels and maintain fish health.</p>	Vertebrates	Yes	ANS and non-target vertebrates could enter ponds through water supply	Filter incoming water with mesh socks placed over incoming water pipes.	Yes
	Invertebrates	"	ANS and non-target invertebrates could enter tanks through water supply	"	"
	Plants	"	Non-target plant material could enter tanks through water supply	Filter incoming water with mesh socks placed over incoming water pipes. Place catfish in lined ponds and use herbicide to reduce vegetation.	"
	Others	"	Possibility of external parasites exist on ANS and non-target fish species that may enter through the water supply	Filter incoming water with mesh socks placed over incoming water pipes. Check catfish for parasites and give a therapeutic treatment if needed.	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<p><b>Task 5</b> Ponds are drained and catfish are moved using an autocrane and large net from earthen ponds into an onsite holding truck. Catfish are released into 145 ft. concrete raceways one to two days prior to loading and stocking to receiving waters.</p>	Vertebrates	Yes	ANS and non-target vertebrates could be transferred from the pond into the autocrane net and into the raceway	Treat water used to fill distribution tanks with a UV light and remove vertebrates if visible while loading.	Yes
	Invertebrates	"	ANS and non-target invertebrates could be transferred from the pond into the autocrane net and into the raceway	Treat water used to fill distribution tanks with a UV light and remove invertebrates if visible while loading. Sanitize, clean and remove any sediment or debris on dip nets.	"
	Plants	"	Non-target plant material could be transferred from the pond into the autocrane net and into the raceway	Treat water used to fill distribution tanks with a UV light and remove any plant material if visible. Sanitize and clean dip nets.	"
	Others	"	Possibility of external parasites and biologics exist on ANS and non-target fish species that may enter through the water supply	Treat water used to fill distribution tanks with a UV light.	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<p><b>Task 6</b> Distribution tanks are filled with creek water and catfish are loaded using an autocrane and large net.</p>	Vertebrates	Yes	ANS and non-target vertebrates could be transferred from the raceway into the autocrane net and into the distribution tank and from filling the distribution tank	Treat water used to fill distribution tanks with a UV light and remove vertebrates in each net if visible while loading.	Yes
	Invertebrates	"	ANS and non-target invertebrates could be transferred from the raceway into the autocrane net and into the distribution tank and from filling the distribution tank	Treat water used to fill distribution tanks with a UV light and remove invertebrates in each net if visible while loading.	"
	Plants	"	ANS and non-target plant material could be transferred from the raceway into the autocrane net and into the distribution tank and from filling the distribution tank	Treat water used to fill distribution tanks with a UV light and remove plant material in each net if visible while loading.	"
	Others	"	ANS and non-target biologics could be transferred from the raceway into the autocrane net and into the distribution tank and from filling the distribution tank	Treat water used to fill distribution tanks with a UV light.	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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Task 7 Distribution trucks from this station or from other hatcheries transport the catfish to their destination.	Vertebrates	No	N/A	N/A	No
	Invertebrates	"	"	"	"
	Plants	"	"	"	"
	Others	"	"	"	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<p><b>Task 8</b> Water is bucketed or pumped into hauling tank from the stocking location to acclimate catfish to the stocking location's water temperature prior to release.</p>	Vertebrates	No	Draining all water from the tank at the stocking location prevents transfer of ANS and non-target vertebrates back to TNFH.	None	No
	Invertebrates	"	Draining all water from the tank at the stocking location prevents transfer of ANS and non-target invertebrates back to TNFH.	"	"
	Plants	"	Draining all water from the tank at the stocking location prevents transfer of ANS and non-target plant material back to TNFH.	"	"
	Others	"	Draining all water from the tank at the stocking location prevents transfer of ANS and non-target biologics back to TNFH.	"	"

**Hazard Analysis Worksheet (continued)**

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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<p><b>Task 9</b> Catfish are stocked into receiving waters. All water is drained from the distribution tank at the stocking location.</p>	Vertebrates	No	The transfer of ANS and non-target vertebrates have been eliminated or significantly reduced.	None	No
	Invertebrates	"	The transfer of ANS and non-target invertebrates have been eliminated or significantly reduced.	"	"
	Plants	"	The transfer of ANS and non-target plant material have been eliminated or significantly reduced.	"	"
	Others	"	The transfer of ANS and non-target biologics have been eliminated or significantly reduced.	"	"

### HACCP Step 5 – HACCP Plan Form

#### HACCP Plan Form

(all CCP's or "yes's" from column 6 of HACCP Step 4 – Hazard Analysis Worksheet)

Critical Control Point (CCP)	Significant Hazard(s)	Limits for each Control Measure	Monitoring				Evaluation & Corrective Action(s) (if needed)	Supporting Documentation (if any)
			What	How	Frequency	Who		
<p><b>Task 4</b> Catfish are moved to designated earthen ponds where ponds are treated, aerated and water flow is maintained to control growth of aquatic vegetation, sustain adequate dissolved oxygen levels and maintain fish health.</p>	<p>Possibility of ANS and non-target fish species, invertebrates, plant material and possible parasites that exist on fish could be present in the water</p>	<p>Placing socks over water lines prevents ANS and non-target vertebrates, invertebrates and plant material from entering ponds. Administering therapeutic treatments on the fish controls parasites and disease. Choosing lined ponds and using herbicide limits vegetation growth.</p>	<p>Ensure socks are functioning properly. Ensure the use of prophylaxes treatments for maintaining good fish health</p>	<p>Visually inspect equipment</p>	<p>Often</p>	<p>Hatchery personnel</p>	<p>Clean and sanitize nets prior to filling tanks and loading fish.</p>	
<p><b>Task 5</b> Ponds are drained and catfish are moved using an autocrane and large net from earthen ponds into an onsite holding truck. Catfish are released into 145 ft. concrete raceways one to two days prior to loading and stocking to receiving waters.</p>	<p>Possibility of ANS and non-target fish species, invertebrates, plant material and possible parasites that exist on fish could be present in the water</p>	<p>Treating water that is used to fill holding tanks with a UV light will minimize ANS and non-target vertebrates, invertebrates and plant material from being transferred. Remove ANS and non-target species from each net if seen.</p>	<p>Ensure UV filter is in place and functioning. Ensure dip nets and other harvesting equipment allows ANS to escape, is clean and free of debris.</p>	<p>Visually inspect filter and net loads.</p>	<p>Immediately before loading onto holding truck and during every net load</p>	<p>Hatchery personnel</p>		

**HACCP Step 5 – HACCP Plan Form (continued)**

Critical Control Point (CCP)	Significant Hazard(s)	Limits for each Control Measure	Monitoring				Evaluation & Corrective Action(s) (if needed)	Supporting Documentation (if any)
			What	How	Frequency	Who		
<p><b>Task 6</b> Distribution tanks are filled with creek water and catfish are loaded using an autocrane and large net.</p>	<p>Possibility of ANS and non-target vertebrates, invertebrates, plant material and possible parasites that exist on fish could be present in the water</p>	<p>Treating water that is used to fill holding tanks with a UV light will minimize ANS and non-target vertebrates, invertebrates and plant material from being transferred. Remove ANS and non-target species from each net if seen.</p>	<p>Ensure UV filter is in place and functioning. Ensure dip nets and other harvesting equipment allows ANS to escape, is clean and free of debris.</p>	<p>Visually inspect filter and net loads.</p>	<p>Immediately before loading onto distribution truck and during every net load</p>	<p>Hatchery personnel</p>	<p>Clean and sanitize nets prior to filling tanks and loading fish.</p>	

**HACCP Step 5 – HACCP Plan Form (continued)**

<b>Facility:</b> Tishomingo National Fish Hatchery	<b>Activity:</b> Channel Catfish Production
<b>Address:</b> 5503 W. Hwy 7 Tishomingo, OK 74530	
<b>Signature:</b>  <b>HACCP Plan was followed.</b>	<b>Date:</b>