

HACCP Step 1 – Activity Description

Activity Description	
Facility: Inks Dam National Fish Hatchery	Site:
Project Coordinator: Marc Jackson	Activity: Rearing and distribution of Paddlefish for U.S. Fish and Wildlife Service
Site Manager: Marc Jackson	
Address: 345 Clay Young Road Burnet, TX 78611	
Phone: 512-793-2474	

Project Description i.e. Who; What; Where; When; How; Why
<p>Fishery Resource Offices requests paddlefish a year before production begins at the Inks Dam National Fish Hatchery (NFH). Requests are submitted to the Regional Office for prioritization with other production and fishery needs. After review, a production and stocking request is provided to the hatchery prior to the fish rearing season.</p> <p>In late April, hatchery staff pickup first feeding fry from the Tishomingo NFH. Fish are held indoors in holding tanks and flow through water supply. For two (2) to three (3) weeks the paddlefish are acclimated to the water supply and continue artificial feed training. Paddlefish are then moved to outdoor raceways and fed an artificial, pelleted diet. Fish are monitored daily and as densities increase, more space is provided, and chemical treatments are given when necessary until distribution. In July or August, fish pathologists from Region 2 perform disease certification on the fish. After disease certification, fish are enumerated, sorted, weighed and loaded into the distribution truck and transported back to Tishomingo NFH for tagging and stocking.</p>

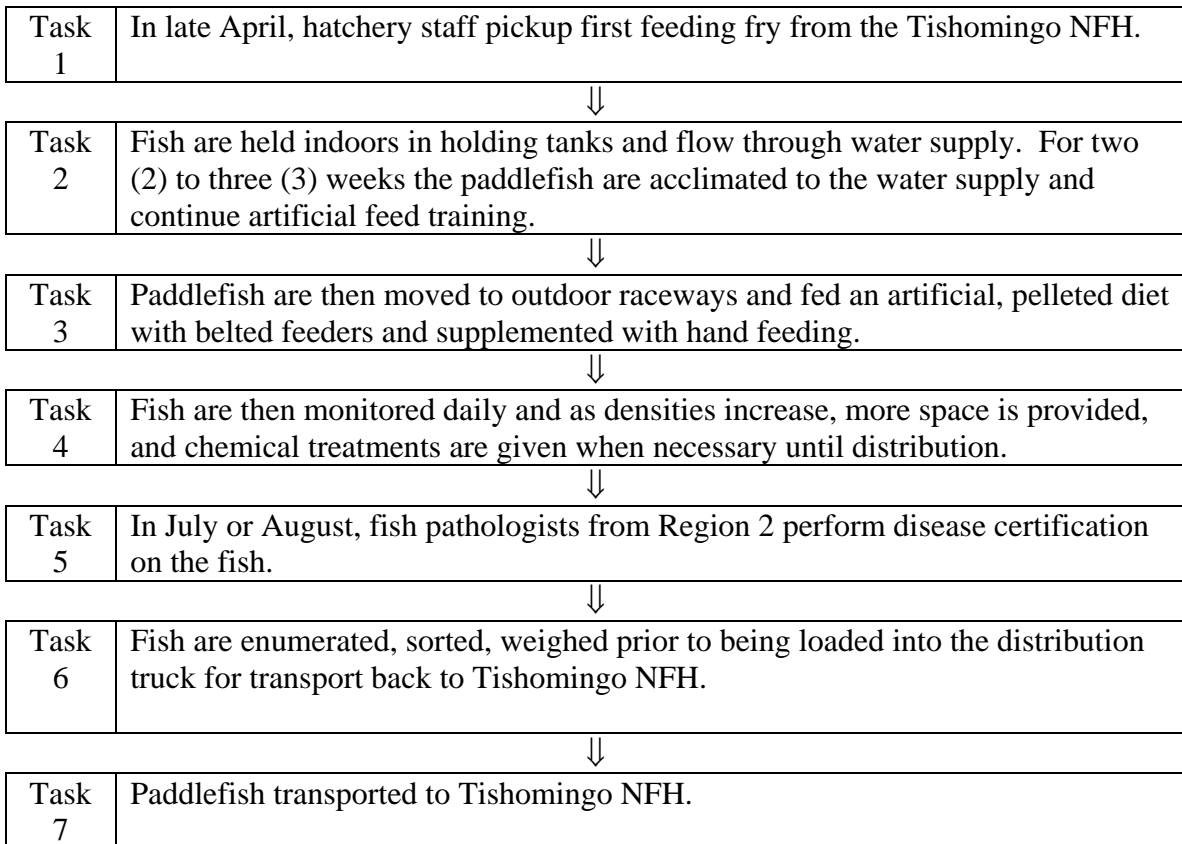
HACCP Step 2 – Identify Potential Hazards

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

Hazards: Species Which May Potentially Be Moved/Introduced
<p>Vertebrates: Guadalupe bass (<i>Micropterus treculi</i>), Logperch (<i>Percina caprodes</i>), Gizzard shad (<i>Dorosoma cepedianum</i>), White bass (<i>Morone chrysops</i>), Bluegill (<i>Lepomis macrochirus</i>), warmouth (<i>Lepomis gulosus</i>), Green sunfish (<i>Lepomis cyanellus</i>), common carp (<i>Cyprinus carpio</i>), smallmouth buffalo (<i>Ictiobus bubalus</i>), redbreast sunfish (<i>Lepomis auritus</i>), bullfrogs (<i>Rana catesbeiana</i>), leopard frog (<i>Rana chricahuensis</i>), red-ear turtles (<i>Trachemys scripta elegans</i>), various tadpoles and aquatic snakes</p>
<p>Invertebrates: Miscellaneous aquatic insects, Asian clam (<i>Corbicula</i> sp.), crawfish</p>
<p>Plants: Potamogeton (<i>Potamogeton distinctus</i>), water star grass (<i>Sagittaria arifolia</i>), brushy pond weed (<i>Najas flexilis</i>), various algae (chlorella, diatoms, cyanobacteria, hydrodictyon)</p>
<p>Other Biologics (e.g. disease, pathogen, parasite): Largemouth bass virus</p>
<p>Others (e.g. construction materials, etc.): None</p>

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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Task 1 In late April, hatchery staff pickup and return to Inks Dam NFH first feeding Paddlefish fry from the Tishomingo NFH.	Vertebrates Other fish species, reptiles, amphibians	No	Fry are sorted at Tishomingo NFH and no ANS occur at this stage		No
	Invertebrates Aquatic insects (spp.), Asian clam, crawfish	No	Fry are sorted at Tishomingo NFH and no ANS occur at this stage		No
	Plants Aquatic macrophytes, various algae (spp.)	No	Fry are sorted at Tishomingo NFH and no ANS occur at this stage		No
	Others LMB Virus	Yes	Fry could be infected from incoming water to Tishomingo NFH	Yearly inspections by Region 2 fish pathologists on the adults.	Yes

Task 2 Paddlefish fry are held indoors in holding tanks with a flow through water supply. They are acclimated to the water supply and continue artificial feed training.	Vertebrates Other fish species, reptile, amphibians	No	No ANS present at this stage because of water filtering		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish.	No	No ANS present at this stage because of water filtering		No
	Plants Aquatic macrophytes, various algae (spp.)	No	No ANS present at this stage because of water filtering		No
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by region 2 fish pathologists	No

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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Task 3 After two (2) to three (3) weeks paddlefish are then moved to outdoor raceways and fed an artificial, pelleted diet with belt feeders and supplemented with hand feeding.	Vertebrates Other fish species, reptiles, amphibians	No	Pack columns are screened		No
	Invertebrates Aquatic insects (spp.), Asian clam, crawfish	No	Flow-through raceways pass insects and small invertebrates out of the raceway. Packed columns are screened.		No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Various algae species con grow on raceway walls and bottoms.	Copper sulfate treatments on a regular basis	No
	Others LMB Virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by Region 2 fish pathologists on the adults.	No

Task 4 Fish are monitored daily and as densities increase, more space is provided. Chemical treatments are given when necessary until distribution.	Vertebrates Other fish species, reptile, amphibians	No	Pack columns are screened		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish.	No	Flow-through raceways pass insects and small invertebrates out of the raceway. Packed columns are screened.		No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Various algae species con grow on raceway walls and bottoms.	Copper sulfate treatments on a regular basis	No
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by region 2 fish pathologists	No

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 5 In July or August, fish pathologists from Region 2 perform disease certification on the Paddlefish at Inks Dam NFH.	Vertebrates Reptiles, amphibians, other fish species	No	Pack columns are screened		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No	Flow-through raceways pass insects and small invertebrates out of the raceway		No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Various algae species con grow on raceway walls and bottoms	Copper sulfate treatments on a regular basis	No
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by Region 2 fish pathologists	Yes

Task 6 Fish are enumerated, sorted, and weighed prior to being loaded into the distribution truck for transport back to Tishomingo NFH.	Vertebrates Reptiles, amphibians, other fish species	No	Pack columns are screened. Fish are handled individually.		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No	Fish are handled individually		No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Various algae species con grow on raceway walls and bottoms	Fish are handled individually and copper sulfate treatments on a regular basis	No
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by Region 2 fish pathologists	No

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 Paddlefish transported to Tishomingo NFH.	Vertebrates Reptiles, amphibians, other fish species	No	Pack columns are screened and fish are handled individually.		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No	Flow-through raceways pass insects and small invertebrates out of the raceway and fish are handled individually.		No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Various algae species con grow on raceway walls and bottoms	Fish are handled individually and copper sulfate treatments on a regular basis	No
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by Region 2 fish pathologists	No

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		
Task 1 In late April, hatchery staff pickup and return to Inks Dam NFH first feeding Paddlefish fry from the Tishomingo NFH.	LMB virus	Yearly inspections by Region 2 fish pathologists and disease certification prior to bring fish of station.	Disease certification prior to arrival	Pathological work done on adults of fry.	Once	Region 2 Fish Health Staff	Isolation	Disease Certification

Facility:	Activity:
Address:	
Signature:	Date:
HACCP Plan was followed.	

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		
Task 5 In July or August, fish pathologists from Region 2 perform disease certification on the fish	LMB virus	Yearly inspections by Region 2 fish pathologists and disease certification	Disease inspection and certification	Pathological work done on sub-adults at Inks Dam	Once	Region 2 Fish Health Staff	Isolation	Disease Certification

Facility:	Activity:
Address:	
Signature:	Date:
HACCP Plan was followed.	