

## HACCP Step 1 – Activity Description

<b>Activity Description</b>	
Facility: Inks Dam National Fish Hatchery	Site:
Project Coordinator: Marc Jackson	Activity: Rearing and distribution of Gulf Coast Striped bass (Phase II size requirement) for U.S. Fish and Wildlife Service.
Site Manager: Marc Jackson	
Address: 345 Clay Young Road Burnet, TX 78611	
Phone: 512-793-2474	

<b>Project Description</b> i.e. Who; What; Where; When; How; Why
<p>Fishery Resource Offices requests Gulf Coast Striped bass 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 April, fry are received from the Welaka NFH by overnight freight in fish shipping boxes. In the following evening hours, fry are stocked into pre-filled and fertilized ponds. These pre-filled ponds are filtered with Saran filter socks and continue to filter the water for approximately five (5) weeks until the fry are harvested and moved to indoor holding tanks. Fry are graded, enumerated and treated if necessary. Training begins on artificial feeds for three (3) weeks for further grow-out as Phase II sized fish. After the three (3) weeks of feed training the fingerlings are stocked in rearing ponds where artificial, pelleted feeds are the main diet throughout the remainder of the rearing season. Region 2 fish pathologists perform disease certification on the Gulf Coast Striped bass in July or August of every year. The six (6) to eight (8) inch fish are usually harvested in November. Harvested fish are moved from rearing ponds to raceways in a hauling unit equipped with oxygen and easy loading/unloading access. The Phase II fish are graded, sorted, weighed and treated, if needed, before they are loaded for distribution in two (2) to three (3) days. Two days prior to loading for distribution, fish are put on well water and treated with salt. The larger (6-8 inch) Gulf Coast Striped bass are easier to separate from non-target species. Requesting fishery resource offices meet the Regional Distribution Unit (RDU) at the stocking sites and assist drivers with unloading.</p>

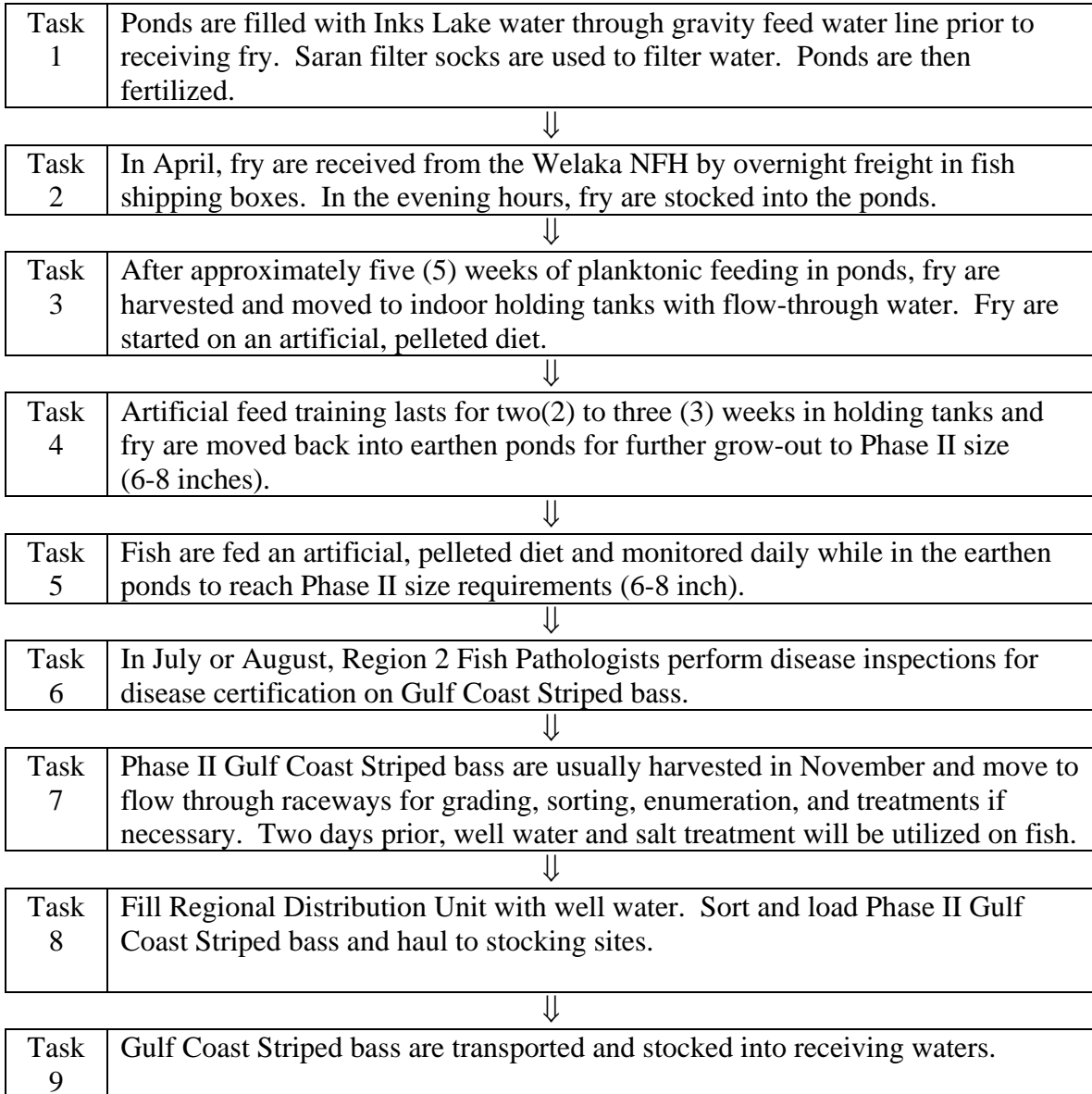
**HACCP Step 2 – Identify Potential Hazards**

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

<b>Hazards: Species Which May Potentially Be Moved/Introduced</b>
<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 Macrochrius</i>), warmouth (<i>Lepomis gulosus</i>), Green sunfish (<i>Lepomis cyanellos</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 sp.</i>), crawfish</p>
<p>Plants: Potamogenton (<i>Potamogenton distinctus</i>), water star grass (<i>Schollera graminea</i>), brushy pond weed (<i>najas flexilis</i>), various algae (<i>chava</i>, <i>pithophora</i>, <i>hydrodicton</i>)</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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<b>Task 1</b> Ponds are filled with Inks Lake water through gravity feed water line. Saran filter socks are used to filter water. Ponds are then fertilized.	Vertebrates Other fish species, reptiles, amphibians	Yes	Water is supplied by Inks Lake and these species are known to exist	Saran filers are used to filter incoming lake water to prevent ANS from entering ponds	Yes
	Invertebrates Aquatic insects (spp.), Asian clam, crawfish	Yes	Water is supplied by Inks Lake and these species are known to exist	Saran filers are used to filter incoming lake water to prevent ANS from entering ponds	Yes
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Water is supplied by Inks Lake and these species are known to exist	Saran filers are used to filter incoming lake water to prevent ANS from entering ponds Copper Sulfate treatments regularly	Yes
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by Region 2 fish pathologists	No

<b>Task 2</b> In April, fry are received from the Welaka NFH by overnight freight in fish shipping boxes. In the evening hours, fry are stocked into the ponds.	Vertebrates Other fish species, reptile, amphibians	No	No ANS present at this life stage		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish.	No	No ANS present at this life stage		No
	Plants Aquatic macrophytes, various algae (spp.)	No	No ANS present at this life stage	Copper Sulfate treatments regularly	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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<b>Task 3</b> After approximately five (5) weeks of planktonic feeding in ponds, fry are harvested and moved to indoor flow-through holding tanks. Start fry on artificial diet.	Vertebrates Reptiles, amphibians, other fish species	Yes	Other species could be in the pond and collected in seining process.	Fry sorted for ANS. Remove by hand after visual inspection.	Yes
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	Yes	Other species could be in the pond and collected in seining process	Fry sorted for ANS. Remove by hand after visual inspection. Flow-through water supply passes small ANS.	Yes
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Other species could be in the pond and collected in seining process	Fry sorted for ANS. Remove by hand after visual inspection. Flow-through water supply passes small ANS.	Yes
	Others LMB virus	Yes	Bass species from Inks Lake could be infected with the LMB virus.	Yearly inspections by Region 2 fish pathologists.	No

<b>Task 4</b> Artificial feed training lasts for two (2) to three (3) weeks in holding tanks and fry are moved back into earthen ponds for further grow-out.	Vertebrates Reptiles, amphibians, other fish species	No	No ANS present at this life stage	Flow-through water supply passes small ANS.	No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No	No ANS present at this life stage	Flow-through water supply passes small ANS.	No
	Plants Aquatic macrophytes, various algae (spp.)	No	No ANS present at this life stage	Flow-through water supply passes small ANS.	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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<b>Task 5</b> Sub-Phase II fish are fed an artificial, pelleted diet and monitored daily while in the earthen ponds to reach Phase II size requirements.	Vertebrates Reptiles, amphibians, other fish species	Yes	Water is supplied by Inks Lake and these species are known to exist	ANS can be removed at harvest.	No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	Yes	Water is supplied by Inks Lake and these species are known to exist	ANS can be removed at harvest	No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Water is supplied by Inks Lake and these species are known to exist	ANS can be removed at harvest	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
<b>Task 6</b> In July or August, Region 2 Fish Pathologists perform disease inspections for disease certification on Gulf Coast Striped bass.	Vertebrates Reptiles, amphibians, other fish species	Yes	Water is supplied by Inks Lake and these species are known to exist	ANS can be removed at harvest	No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	Yes	Water is supplied by Inks Lake and these species are known to exist	ANS can be removed at harvest	No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Water is supplied by Inks Lake and these species are known to exist	ANS can be removed at harvest	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

### 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 7</b> <b>Phase II Gulf Coast</b> <b>Striped bass are</b> <b>usually harvested</b> <b>in November and</b> <b>moved to flow</b> <b>through raceways</b> <b>for grading,</b> <b>sorting,</b> <b>enumeration, and</b> <b>treatments if</b> <b>necessary. Two</b> <b>days prior, well</b> <b>water and salt</b> <b>treatment will be</b> <b>utilized on fish.</b>	Vertebrates Reptiles, amphibians, other fish species	Yes	Other species could be in the pond and collected in seining process	Fish are graded, and sorted. ANS are removed by hand.	yes
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No		Fish are graded, and sorted. ANS are removed by hand.	No
	Plants Aquatic macrophytes, various algae (spp.)	Yes	Other species could be in the pond and collected in seining process	Flow-through raceways and well water remove vegetation. Remove larger pieces by hand.	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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<b>Task 8</b> Fill Regional Distribution Unit with well water. Load Phase II (6-8") Gulf Coast Striped bass and haul to stocking sites.	Vertebrates Reptiles, amphibians, other fish species	No		Fish have been sorted for ANS. RDU filled with well water.	No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No		Fish have been sorted for ANS. RDU filled with well water.	No
	Plants Aquatic macrophytes, various algae (spp.)	No		Fish have been sorted for ANS. RDU filled with well water.	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

<b>Task 9</b> Gulf Coast Striped bass are transported and stocked into receiving waters.	Vertebrates Reptiles, amphibians, other fish species	No	Fish have been sorted for ANS. RDU filled with well water		No
	Invertebrates Aquatic insect (spp.), Asian clam, crawfish	No	Flow- through raceways pass aquatic insects out and other invertebrates are hand sorted out.		No
	Plants Aquatic macrophytes, various algae (spp.)	No	Macrophytes and algae species pass through raceway.		No
	Others LMB virus	No	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		
<b>Task 1</b> Ponds are filled with Inks Lake water through gravity feed water line. Saran filter socks are used to filter water. Ponds are then fertilized.	Other fish species Invertebrates Reptiles Amphibians  LMB virus	Saran filter socks used on intake water.  Fish Health certification on adults prior to shipping fry by Region 4.	Ensure socks are working properly	Visually inspect and clean	Twice daily	Staff	Ponds will be thoroughly sorted when harvested	Disease certification
<b>Facility:</b>					<b>Activity:</b>			
<b>Address:</b>								
<b>Signature:</b>					<b>Date:</b>			
<b>HACCP Plan was followed.</b>								

**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			Who	Evaluation & Corrective Action(s) (if needed)	Supporting Documentation (if any)
			What	How	Frequency			
<b>Task 3</b> After approximately five (5) weeks of planktonic feeding in ponds, fry are moved to indoor flow-through holding tanks.	Other fish species Invertebrates Reptiles Amphibians LMB virus Aquatic vegetation	Fish will be graded and hand sorted. High flows in flow-through tanks pass smaller ANS. Salt and formalin treatments remove other ANS.	Fish hand sorted with visual inspections. Chemical treatments and water flows are utilized.	Visually and annual inspections. Chemical treatments administered	Daily until stocking back into ponds	Staff		

<b>Facility:</b>	<b>Activity:</b>
<b>Address:</b>	
<b>Signature:</b>	<b>Date:</b>
<b>HACCP Plan was followed.</b>	

**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		
<b>Task 6</b> In July or August, Region 2 Fish Pathologists perform disease inspections for disease certification on Gulf Coast Striped bass.	Possible infected bass species known to reside in Inks Lake	Yearly inspections by region 2 fish pathologists	Yearly fish health inspections and disease certification	Fish pathological workup on appropriate species	Annually	Region 2 fish pathologists	Region 2 fish pathologists as per Regional direction	Disease certification document

<b>Facility:</b>	<b>Activity:</b>
<b>Address:</b>	
<b>Signature:</b>	<b>Date:</b>
<b>HACCP Plan was followed.</b>	

**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		
<b>Task 7</b> Phase II Gulf Coast Striped bass are usually harvested in November. Moved to flow through raceways for grading, sorting, enumeration, and treatments if necessary. Two days prior, well water and salt treatment will be utilized on fish	Other fish species Invertebrates Reptiles Aquatic vegetation	Fish will be graded and hand sorted for all ANS. High flow well water passes smaller ANS through screens. Salt and formalin treatments remove any other ANS.	Visual inspections and hand removal . High flows of well water. Chemical treatments, if necessary.	Visual inspections	Once. Additional treatments, if necessary	Staff	Raceways will be thoroughly sorted for all ANS	

<b>Facility:</b>	<b>Activity:</b>
<b>Address:</b>	
<b>Signature:</b>	<b>Date:</b>
<b>HACCP Plan was followed.</b>	

