Gulf Striped Bass HACCP Plan
(Hazard Analysis Critical Control Point)

1. **Activity Description**
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1) Activity Description

Facility: Warm Springs National Fish Hatchery	**Site:** Warm Springs National Fish Hatchery
Project Coordinator: Carlos Echevarria	**Activity:** Gulf Striped Bass culture
Site Manager: Carlos Echevarria	
Address: 5308 Spring Street Warm Springs, GA 31830	
Phone: (706) 655-3382	

Project Description i.e. Who; What; Where; How; Why
Gulf strain striped bass fry are received in late April and stocked into WSNFH ponds. Phase 1 Striped bass are harvested in late May via pond drawdown and seine and stocked into receiving waters, and Phase 2 Striped bass are harvested in late November via pond drawdown and seine and stocked into receiving waters.

2) Identify Potential Hazards

Hazards: Species which may potentially be moved/introduced
Vertebrates: *Gambusia holbrooki, Carassuis auratus* (goldfish), tadpoles (various species)
Invertebrates: Crayfish (various species), zebra mussels, ferry shrimp, grass shrimp
Plants: Algae (various species)
Other Biologics: bacteria, parasites, protozoans, fungus
Others: None

3) Flow Diagram

Step1		April: ponds are filled with spring water from Cold Springs
Step2		Ponds are fertilized for plankton production, hardness is adjusted
Step 3		STB fry (2-4 days old) are received in late April and stocked directly into WSNFH ponds
Step 4		Spring water is continuously added to the ponds to offset leakage and evaporation
Step 5		STB are harvested and moved to raceways in the holding house in late May, water and bass are drained directly into raceways
Step 6		STB are held in flow through raceways, and sampled for shipping
Step 7		Distribution truck filled with treated pond water, Phase 1 STB loaded by dip-net
Step 8		Phase 1 STB are hauled to and stocked into receiving waters
Step 9		Disinfect Holding House
Step 10		Distribution truck returns to hatchery
Step 11		Phase 2 STB are held in flow through raceways, pellet trained, stocked into WSNFH ponds in early June
Step 12		Late November Phase 2 STB are harvested and moved to raceways in holding house
Step 13		Bass are held in raceways for 24 hours, weighed for shipping
Step 14		Distribution truck filled with treated pond water, STB are loaded by dip-net
Step 15		STB are hauled to and stocked into receiving waters
Step 16		Distribution truck returns to hatchery

4) Hazard Analysis Worksheet

(1) Harvest or Aquaculture Step	(2) Identify potential ANS hazards introduced or controlled at this step (1)	(3) Are any potential ANS hazards significant? (Yes/No)	(4) Justify your decisions for column 3	(5) What control measures can be applied to prevent the significant hazards	(6) Is this step a critical control point? (Yes/No)
(1) April: ponds filled with water from Cold Springs	Fish/other vert: none	No	No vertebrates in ponds	NA	No
	Invertebrates: ferry shrimp, grass shrimp	Yes	Dormant in pond substrate	Treat pond substrate with hydrated lime	No
	Plants: algae	Yes	Dormant in pond substrate	Treat pond with herbicides	No
	Other biologics:	Yes	ANS biologics dormant in pond substrate	Treat pond substrate with hydrated lime	No
(2) Ponds fertilized for plankton production, hardness is adjusted	Fish/other vert: none	No	No ANS in fertilizer	NA	No
	Invertebrates: none	No	No ANS in fertilizer	NA	No
	Plants: none	No	No ANS in fertilizer	NA	No
	Other biologics: none	No	No ANS in fertilizer	NA	No
(3) Gulf strain striped bass fry received in late April and stocked directly into ponds	Fish/other vert: various	Yes	ANS vertebrates possible in incoming fish bags	Inspect bags and remove ANS	Yes
	Invertebrates: various	Yes	ANS invertebrates possible in incoming fish bags	Inspect bags and remove ANS	Yes
	Plants: various	Yes	ANS plants possible in incoming fish bags	Inspect bags and remove ANS	Yes
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	ANS biologics possible in incoming fish bags	Inspect bags and remove ANS	Yes
(4) Springs water is continuously added to ponds to offset leakage and evaporation	Fish/other vert: various	No	Clean Spring water source	NA	No
	Invertebrates: various	No	Clean Spring water source	NA	No
	Plants: various	No	Clean Spring water source	NA	No
	Other biologics: bacteria, protozoans, parasites, fungus	No	Clean Spring water source	NA	No
(5) STB are harvested and moved to raceways in holding house in late May	Fish/other vert: tadpoles, *G. holbrooki*	Yes	Various vertebrates harvested along with STB	Visually inspect seine for unwanted vertebrates	No
	Invertebrates: crayfish	Yes	Various crayfish species harvested along with STB	Visually inspect seine for unwanted invertebrates	No
	Plants: algae	Yes	Algae harvested along with STB	Visually inspect seine for unwanted plant material	No
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	Other biologics harvested along with STB	Minimize water transfer from pond to holding house	No

4) Hazard Analysis Worksheet cont'd

(6) STB are held in flow through raceways, and sampled for shipping	Fish/other vert: tadpoles, *G. holbrooki*	Yes	Various vertebrates transported with STB to raceways	Remove vertebrates during cleaning, keep fish on flow through for 24 hours prior to shipping	Yes
	Invertebrates: crayfish	Yes	Various invertebrates transported with STB to raceways	Remove invertebrates during cleaning, keep fish on flow through for 24 hours prior to shipping	Yes
	Plants: algae	Yes	Plant material transported with STB to raceways	Remove plants by hand, keep fish on flow through for 24 hours prior to shipping	Yes
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	STB may harbor biologics	0.5% salt treatment	Yes
(7) Distribution truck filled with treated pond water, phase 1 bass loaded by dip-net	Fish/other vert: tadpoles, *G. holbrooki*	No	Step 6 reduced hazard to an acceptable level	NA	No
	Invertebrates: crayfish	No	Step 6 reduced hazard to an acceptable level	NA	No
	Plants: algae	No	Step 6 reduced hazard to an acceptable level	NA	No
	Other biologics: bacteria, protozoans, parasites, fungus	No	Step 6 reduced hazard to an acceptable level	NA	No
(8) Phase 1 STB hauled to and stocked into receiving waters	Fish/other vert: tadpoles, *G. holbrooki*	No	Step 6 reduced hazard to an acceptable level	NA	No
	Invertebrates: crayfish	No	Step 6 reduced hazard to an acceptable level	NA	No
	Plants: algae	No	Step 6 reduced hazard to an acceptable level	NA	No
	Other biologics: bacteria, protozoans, parasites, fungus	No	Step 6 reduced hazard to an acceptable level	NA	No
(9) Disinfect Holding House	Fish/other vert: tadpoles, *G. holbrooki*	No	Step 6 reduced hazard to an acceptable level	NA	No
	Invertebrates: crayfish	No	Step 6 reduced hazard to an acceptable level	NA	No
	Plants: algae	No	Step 6 reduced hazard to an acceptable level	NA	No
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	Sterilize tanks before new shipment of fish are placed into raceways	Spray tanks with 300ppm chlorinated water	No
(10) Distribution truck returns to hatchery	Fish/other vert: none	No	Filter on intake pipes keeps risk to an acceptable level	NA	No
	Invertebrates: zebra mussels	Yes	Zebra mussels larvae not visible	Truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes
	Plants: algae, Eurasian watermillfoil	Yes	Plant material may be caught on truck axle, bumpers, etc.	Plant material removed by hand and truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	Biologics may not be visible	Truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes

4) Hazard Analysis Worksheet cont'd

(11) Phase 2 STB held in flow through raceways, pellet trained, stocked into WSNFH hatchery ponds in early June	Fish/other vert: none	No	Step 6 reduced hazard to an acceptable level, fish not leaving WSNFH	NA	No
	Invertebrates: none	No	Step 6 reduced hazard to an acceptable level, fish not leaving WSNFH	NA	No
	Plants: none	No	Step 6 reduced hazard to an acceptable level, fish not leaving WSNFH	NA	No
	Other biologics: none	No	Step 6 reduced hazard to an acceptable level, fish not leaving WSNFH	NA	No
(12) Late November: Phase 2 STB harvested and moved to raceways in holding house, water and STB drained directly into raceways	Fish/other vert: tadpoles, *G. holbrooki*	Yes	Various vertebrates harvested along with bass	Visually inspect seine for unwanted vertebrates	No
	Invertebrates: crayfish	Yes	Various crayfish species harvested along with bass	Visually inspect seine for unwanted invertebrates	No
	Plants: algae	Yes	Algae harvested along with bass	Visually inspect seine for unwanted plant material	No
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	Other biologics harvested along with bass	Minimize water transfer from pond to holding house	No
(13) STB held in flow through raceways for 24 hours, weighed for shipping	Fish/other vert: tadpoles, *G. holbrooki*	Yes	Various vertebrates transported with bass to raceways	Remove vertebrates during cleaning, keep fish on flow through for 24 hours prior to shipping	Yes
	Invertebrates: crayfish	Yes	Various invertebrates transported with bass to raceways	Remove invertebrates during cleaning, keep fish on flow through for 24 hours prior to shipping	Yes
	Plants: algae	Yes	Plant material transported with bass to raceways	Remove plants by hand, keep fish on flow through for 24 hours prior to shipping	Yes
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	STB may harbor biologics	0.5% salt treatment	Yes
(14) Distribution truck filled with treated pond water, bass loaded by dip-net	Fish/other vert: none	No	Step 12 reduces hazard to an acceptable level	NA	No
	Invertebrates: none	No	Step 12 reduces hazard to an acceptable level	NA	No
	Plants: none	No	Step 12 reduces hazard to an acceptable level	NA	No
	Other biologics: none	No	Step 12 reduces hazard to an acceptable level	NA	No
(15) Phase 2 STB hauled to and stocked into receiving waters	Fish/other vert: none	No	Step 12 reduces hazard to an acceptable level	NA	No
	Invertebrates: none	No	Step 12 reduces hazard to an acceptable level	NA	No
	Plants: none	No	Step 12 reduces hazard to an acceptable level	NA	No
	Other biologics: none	No	Step 12 reduces hazard to an acceptable level	NA	No

4) Hazard Analysis Worksheet cont'd

(16) Disinfect Holding House	Fish/other vert: tadpoles, *G. holbrooki*	No	Step 6 reduced hazard to an acceptable level	NA	No
	Invertebrates: crayfish	No	Step 6 reduced hazard to an acceptable level	NA	No
	Plants: algae	No	Step 6 reduced hazard to an acceptable level	NA	No
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	Sterilize tanks before new shipment of fish are placed into raceways	Spray tanks with 300ppm chlorinated water	No
(17) Distribution truck returns to hatchery and disinfected	Fish/other vert: none	No	Filter on intake pipes keeps risk to an acceptable level	NA	No
	Invertebrates: zebra mussels	Yes	Zebra mussels larvae not visible	Truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes
	Plants: algae, Eurasian watermillfoil	Yes	Plant material may be caught on truck axle, bumpers, etc.	Plant material removed by hand and truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes
	Other biologics: bacteria, protozoans, parasites, fungus	Yes	Biologics may not be visible	Truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes

5) ANS-HACCP Plan Form

(1) Critical Control Point (CCP)	(2) Significant Hazard(s)	(3) Limits for each Control Measure	Monitoring				(8) Evaluation and Corrective Action(s)	(9) Supporting Documentation (if any)
			(4) What	(5) How	(6) Frequency	(7) Who		
(3) Gulf striped bass fry are received in late April and stocked directly into ponds	Non-native plants, non-native fish, non-native invertebrates, other biologics	Visually inspect shipping bags for ANS	Plants, animals	Visual inspection	Once	Hatchery employee	Minimize water transfer from shipping bags to ponds	NA
(6,13) Phase 1 and 2 STB are held in flow through raceways, and sampled for shipping	Tadpoles, *G. holbrooki*, *C. auratus*, crayfish, protozoans, parasites, fungus, bacteria	Hold fish in flow through raceways for at least 18 hours prior	Time, flow rate	Time, visual inspection	Each raceway of STB prior to shipping	Hatchery employee	Increase water flow, manually remove all unwanted organisms	NA
(10,17) Distribution truck returns to hatchery and disinfected	Zebra mussels, E. milfoil, other invertebrates, other plants and other biologics	Truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Disinfection process	Monitor ppm chlorine, visually inspect truck	Once after truck returns to hatchery	Truck driver	More thorough disinfection and inspection process	NA

Facility: Warm Springs National Fish Hatchery	**Activity:** Gulf Striped Bass culture: Harvesting phase 1 and phase 2 Gulf strain striped bass for restoration
Address: 5308 Spring Street Warm Springs, GA 31830	
Signature: **HACCP Plan Was Followed**	**Date:**