Bluegill Sunfish (and other Lepomis species) HACCP Plan
(Hazard Analysis Critical Control Point)

1. **Activity Description**
2. **Potential Hazards**
3. **Flow Diagram**
4. **Hard Analysis Worksheet**
5. **HACCP Plan Form**

1) Activity Description

Facility: Warm Springs National Fish Hatchery	**Site:** Warm Springs National Fish Hatchery
Project Coordinator: Carlos Echevarria	**Activity:** Harvesting bluegill sunfish for forage and stocking at Eufala NWR, and Piedmont NWR
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
Bluegill are obtained by pond drawdown and seining. Bluegill are used for forage at Warm Springs National Fish Hatchery and for stocking at Eufala NWR, and Piedmont NWR.

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)
Plants: Algae (various species), Eurasian watermillfoil
Other Biologics: bacteria, parasites, protozoans, fungus
Others: None

3) Flow Diagram

Step 1		Lepomis species seined from ponds and hauled to raceways in holding house, water and fish drained directly into raceways from hauling truck
Step 2		Lepomis species held in flow through raceways for at least 72 hours prior to shipping
Step 3		Lepomis species treated with 75 ppm formalin for 3 consecutive days
Step 4		Distribution tuck filled with treated pond water, salinity adjusted to 0.25%, and Lepomis species added by dip-net
Step 5		Lepomis hauled to Eufala NWR, and Piedmont NWR, and stocked into receiving waters
Step 6		Distribution truck returns to hatchery and is disinfected

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) Lepomis species seined from ponds and moved to raceways in holding house; water and fish drained directly into raceways from hauling tank	Fish/other vert: *Gambusia holbrooki, Carrassius auratus,* tadpole	Yes	Other vertebrates harvested with Lepomis species	Visually inspect seine for unwanted vertebrates	No
	Invertebrates: crayfish	Yes	Invertebrates harvested along with Lepomis species	Visually inspect seine for unwanted invertebrates	No
	Plants: algae	Yes	Plants harvested along with Lepomis species	Visually inspect seine for unwanted plants	No
	Other biologics: bacteria, fungus, protozoans, parasites	Yes	Other biologics harvested along with Lepomis species	Hazard must be controlled at a later step	No
(2) Lepomis species held in flow through raceways for at least 72 hours prior to shipping	Fish/other vert: *Gambusia holbrooki, Carrassius auratus,* tadpole	Yes	Vertebrates transported with Lepomis species to raceway	Remove unwanted vertebrates during cleaning and keep fish on flow through for at least 72 hours prior to shipping	Yes
	Invertebrates: crayfish	Yes	Invertebrates transported with Lepomis species to raceway	Remove unwanted invertebrates	Yes
	Plants: algae	Yes	Plants transported with Lepomis species to raceway	Remove plant material, keep fish on flow through for at least 72 hours prior to shipping	Yes
	Other biologics: bacteria, fungus, protozoans, parasites	Yes	Other biologics harvested along with Lepomis species	Formalin treatment, flow through for at least 72 hours prior to shipping	No
(3) Lepomis species treated with 75 ppm formalin for 3 consecutive days	Fish/other vert: none	No	Vertebrates removed to an acceptable level in Step 2	NA	No
	Invertebrates: none	No	Invertebrates removed to an acceptable level in Step 2	NA	No
	Plants: none	No	Plants removed to acceptable level in Step 2	NA	No
	Other biologics: bacteria, fungus, protozoans, parasites	Yes	Any bacteria, fungus, protozoans, parasites must be controlled prior to shipping	Static treatment of 75ppm formalin for 3 consecutive days	Yes
(4) Distribution truck filled with treated pond water, salinity adjusted to 0.25% salt, and Lepomis species loaded by dip-net	Fish/other vert: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
	Invertebrates: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
	Plants: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
	Other biologics: bacteria, fungus, protozoans, parasites	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No

4) Hazard Analysis Worksheet cont'd

(5) Lepomis hauled to Eufala, AL and stocked into receiving waters	Fish/other vert: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
	Invertebrates: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
	Plants: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
	Other biologics: none	No	Hazards controlled to acceptable level in steps 2 and 3	NA	No
(6) Distribution truck returns to hatchery and disinfected	Fish/other vert: none	No	Verts won't pass through filter and pump on truck	NA	No
	Invertebrates: none	No	Invertebrates won't pass through filter and pump on truck	NA	No
	Plants: Eurasian watermillfoil, algae	Yes	Plant material may be caught on truck axle, bumbers etc.	Plant material removed by hand, truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes
	Other biologics: bacteria, fungus, protozoans, parasites	Yes	Invertebrates may not be visible and unintentionally transported back to WSNFH	Truck disinfected with 300ppm chlorine solution in designated hatchery disinfection area	Yes

(1) Critical Control Point (CCP)	(2) Significant Hazard(s)	(3) Limits for each Control Measure	Monitoring				(8) Evaluation and Corrective Actions (if needed)	(9) Supporting documentation (if any)
			(4) What	(5) How	(6) Frequency	(7) Who		
(2) Lepomis species held in flow through raceways for at least 72 hours prior to shipping	*G. holbrooki, C. auratus* Tadpole, crayfish, algae	Hold fish in flow through raceways for 72 hours prior to shipping, manually clean screens	Time, flow rate, presence of verts, inverts, and plants	Visual inspection	Each raceway, several times per day	Hatchery employee	Increase time in flow through tank, increase water flow, manually remove unwanted organisms	Record time and approximate water flow in daily logs
(3) Lepomis species treated with 75ppm formalin for 3 consecutive days	Bacteria, fungus, protozoans, parasites	Fish are treated with static 75ppm fromalin for 3 consecutive days prior to shipping	Treatment time, ppm formalin	Visual inspection	3 days	Hatchery employee	Increase or decrease concentration of formalin	Record concentration of treatment days of treatment and length of treatment in daily logs
(6) Distribution truck returns to hatchery and disinfected	Bacteria, protozoans, parasites	Disinfect truck with 300ppm chlorinated water in designated hatchery disinfection area	[ ] chlorine	City water	Once	Truck driver	Cleanse truck more thoroughly	Record where and when truck is disinfected in maintenance and inspection handbook

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Address: 5308 Spring Street Warm Springs, GA 31830	
Signature: **HACCP Plan Was Followed**	**Date:**