

# Relict Darter Culture

## HACCP Step 1 – Activity Description

<b>Activity Description</b>		
Facility:	Wolf Creek National Fish Hatchery	Site: Threatened and Endangered Lab
Project Coordinator:	Rick Nehrling	Activity: Relict darter Culture
Site Manager:	James H. Gray	
Address:	50 Kendall Road Jamestown, KY 42629	
Phone:	270-343-3797	

<b>Project Description</b> i.e. Who; What; Where; When; How; Why
<p>The Relict darter (<i>Etheostoma chienense</i>) is officially listed as an endangered species. The relict darter is only known from the Bayou du Chien drainage of Western Kentucky. Habitat degradation and loss has pushed this species to the brink of extinction. Relict darters (RD) were field collected by Conservation Fisheries Inc. to act as a captive brood population. Offspring and captured adults were transferred to Wolf Creek National Fish Hatchery in 2001, 2002, and 2003. Wolf Creek NFH maintains these rare fish as an ark population and as captive brood stock. There are no current plans to release these fish back into their native habitat.</p>

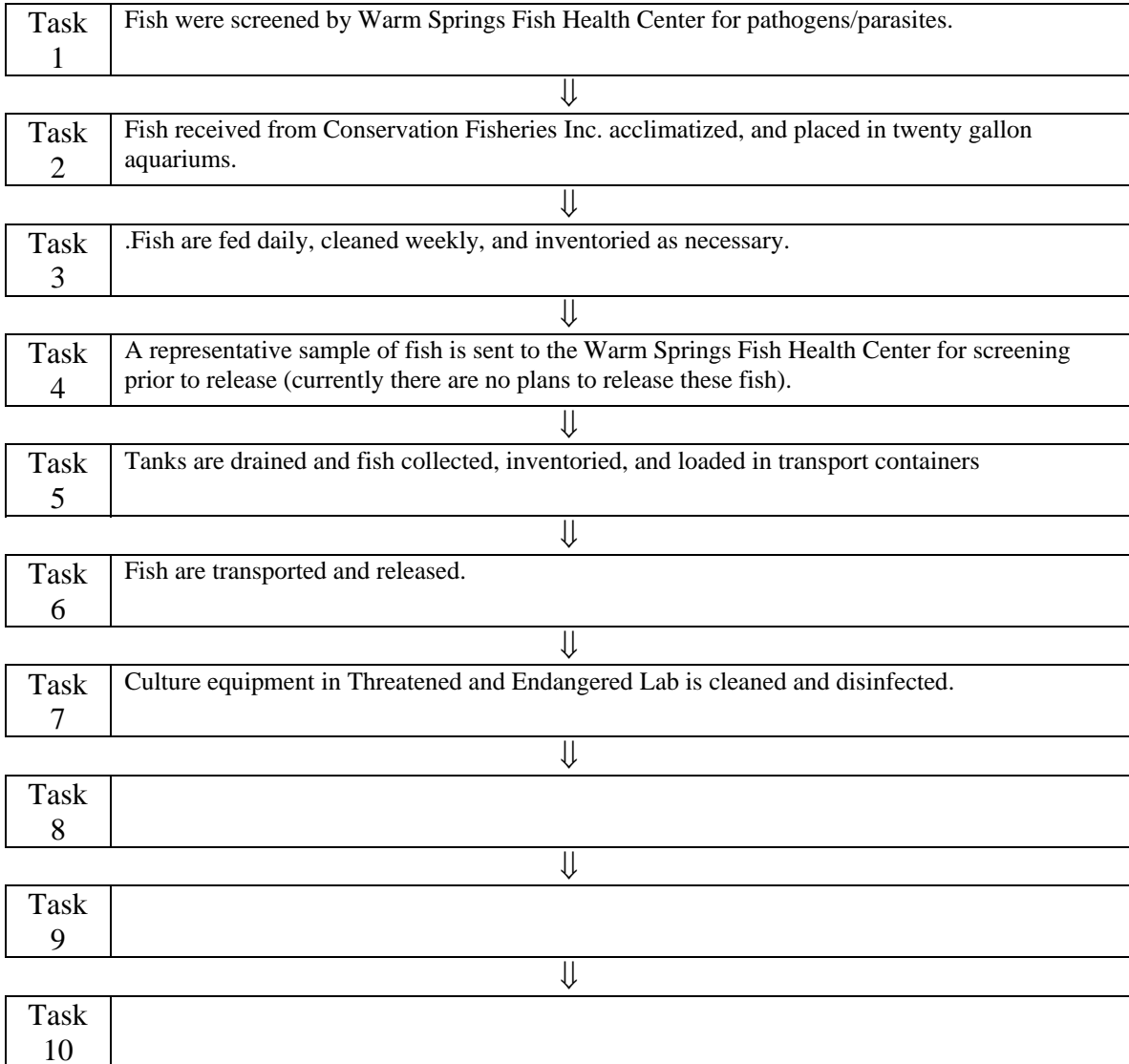
## HACCP Step 2 – Identify Potential Hazards

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

<b>Hazards: Species Which May Potentially Be Moved/Introduced</b>
<b>Vertebrates:</b> None
<b>Invertebrates:</b> None
<b>Plants:</b> None
<b>Other Biologics (e.g. disease, pathogen, parasite):</b> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites commonly associated with salmonid culture Pathogens/Parasites associated with the culture of Endangered fish.
<b>Others (e.g. construction materials, etc.):</b> None

### HACCP Step 3 – Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project  
Described in HACCP Step 1 – Activity Description



### 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>  Fish were screened by Warm Springs Fish Health Center for pathogens/parasites.	<u>Vertebrates</u> None	No	No vertebrates in sample	N/A	No
	<u>Invertebrates</u> None	No	No invertebrates in sample.	N/A	No
	<u>Plants</u> None	No	No plants in sample.	N/A	No
	<u>Others</u> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish	Yes	Pathogens/Parasites can be introduced into the culture facility if not screened.	If Pathogens/Parasites are detected that pose a risk to culture facility or wild population, the fish are not transferred.	Yes

<b>Task 2</b>  Fish received from Conservation Fisheries Inc. acclimatized, and placed in twenty gallon aquariums.	<u>Vertebrates</u> None	No	No vertebrates in sample	N/A	No
	<u>Invertebrates</u> None	No	No invertebrates in sample.	N/A	No
	<u>Plants</u> None	No	No plants in sample.	N/A	No
	<u>Others</u> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish	Yes	Fish could be asymptomatic carriers.	Conduct another disease screening prior to release.	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  Fish are fed daily, cleaned weekly, and inventoried as necessary.	<u>Vertebrates</u> None	No	No vertebrates in sample	N/A	No
	<u>Invertebrates</u> None	No	No invertebrates in sample.	N/A	No
	<u>Plants</u> None	No	No plants in sample.	N/A	No
	<u>Others</u> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish Pathogens/Parasites commonly associated with salmonid culture	Yes	Fish could be asymptomatic carriers.	Chlorinated city water is chemically neutralized to provide tank water. Hand sanitizing before working around tanks. The use of a disinfecting mat to prevent the spread of disease either entering or exiting. The use of certified sterile food. No transfer of water from one tank to another. All nets/equipment are disinfected and allowed to dry. Trout culture equipment and protective wear prohibited from lab.	No

Task 4  A representative sample of fish is sent to the Warm Springs Fish Health Center for screening prior to release (currently there are no plans to release these fish).	<u>Vertebrates</u> None	No	No vertebrates in sample	N/A	No
	<u>Invertebrates</u> None	No	No invertebrates in sample.	N/A	No
	<u>Plants</u> None	No	No plants in sample.	N/A	No
	<u>Others</u> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish Pathogens/Parasites commonly associated with salmonid culture	Yes	Pathogens/Parasites can be introduced into the wild population if not screened.	Fish are sent to the Warm Springs FHC for fish pathology screening. Screenings include parasitology, bacteriology, and virology. If the screening is positive and non- indigenous to the stocking site, the fish are not stocked.	Yes

### 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 5</b>  Tanks are drained and fish collected, inventoried, and loaded in transport containers	<u>Vertebrates</u> None	No	Fish are hand sorted.	N/A	No
	<u>Invertebrates</u> None	No	None present in system	N/A	No
	<u>Plants</u> None	No	None present in system	N/A	No
	<u>Others</u> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish Pathogens/Parasites commonly associated with salmonid culture	Yes	Fish could be asymptomatic carriers.	N/A	No

<b>Task 6</b>  Fish transported to stocking site(s) via truck or van.	<u>Vertebrates</u> None	No	Excluded in previous task.	N/A	No
	<u>Invertebrates</u> None	No	Excluded in previous task.	N/A	No
	<u>Plants</u> None	No	Excluded in previous task.	N/A	No
	<u>Others</u> Dactylogyrus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish Pathogens/Parasites commonly associated with salmonid culture	Yes	Fish could be asymptomatic carriers.	N/A	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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<b>Task 7</b>  Culture equipment in Threatened and Endangered Lab is cleaned and disinfected.	<u>Vertebrates</u> None	No	None present in system	N/A	No
	<u>Invertebrates</u> None	No	None present in system	N/A	No
	<u>Plants</u> None	No	None present in system	N/A	No
	<u>Others</u> Dactylogyus sp. Hexamita sp. Pathogens/Parasites associated with the culture of Endangered fish Pathogens/Parasites commonly associated with salmonid culture	Yes	Contaminated water, cover mops, and gravel.	Grow out tanks are completely disassembled. Hoses, gravel, tank, mops, and power filters are topically treated with a 10% bleach solution and scrubbed/submerged to achieve sterile equipment.	Yes

**HACCP Step 5 – HACCP Plan Form**

**HACCP Plan Form**

<b>HACCP Plan Form</b>								
<b>Critical Control Point (CCP)</b>	<b>Significant Hazard(s)</b>	<b>Limits for each Control Measure</b>	<b>Monitoring</b>				<b>Evaluation &amp; Corrective Action(s) (if needed)</b>	<b>Supporting Documentation (if any)</b>
			<b>What</b>	<b>How</b>	<b>Frequency</b>	<b>Who</b>		
(1) Fish are screened by Warm Springs Fish Health Center for pathogens/parasites.	Spread of pathogens or parasites into the hatchery.	Approximately 5 fish are sent to the Warm Springs Fish Health Center.	Fish pathogens or parasites	Visual and microscopic inspection.	Before the fish are shipped.	Warm Springs Fish Health Center, GA	Detection of a pathogen that could cause an epizootic in capture populations would prohibit transfer to rearing station.	Fish Health Inspection Report
(4) A representative sample of fish is sent to the Warm Springs Fish Health Center for screening prior to release (currently there are no plans to release these fish).	Spread of pathogens or parasites into the wild.	Approximately 5 fish are sent to the Warm Springs Fish Health Center.	Fish pathogens or parasites	Visual and microscopic inspection.	Before the fish are stocked.	Warm Springs Fish Health Center, GA	Detection of a pathogen that could cause an epizootic in wild populations would prohibit stocking.	Fish Health Inspection Report
(7) Culture equipment in Threatened and Endangered Lab is cleaned and disinfected.	dactylogyrus sp., hexamita sp., and pathogens/parasites commonly associated with the culture of endangered fish, pathogens/parasites commonly associated with salmonid culture	Zero Tolerance	Disinfection procedures	Visual, and timed	When a system is taken apart.	Hatchery staff.	Fishery Biologist in charge of the threatened and endangered species lab ensures that disinfection procedures are followed.	Data log book
<b>Facility:</b>	Wolf Creek National Fish Hatchery					<b>Activity:</b>	Barren's Topminnow Culture	
<b>Address:</b>	50 Kendall Road Jamestown, KY 42629							
<b>Signature:</b>						<b>Date:</b>		
<b>HACCP Plan was followed.</b>								