

TITLE: HACCP Plan for Lab-held Zebra-Mussels

HACCP Step 1 – Activity Description

Activity Description	
Facility: The University of Texas at Arlington	Site: Aquatic Lab, The University of Texas at Arlington
Project Coordinator: Robert F. McMahon	Activity: Maintaining zebra mussels for research in the aquatic lab.
Site Manager: David K. Britton	
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Project Description i.e. Who; What; Where; When; How; Why
<p>Live zebra mussels (<i>Dreissena polymorpha</i>) are often held in our aquatic lab at the Center for Biological Macrofouling Research at the University of Texas at Arlington. These mussels are used for physiological ecology research and to assess the efficacies of various control measures.</p> <p>Zebra mussels are often held in 5-gallon aquaria and kept near 5°C (too cold for reproduction) so that they will not release gametes. However, periodic water changes are necessary to keep the animals healthy and precautions are necessary to prevent potentially (yet unlikely) contaminated water from leaving our laboratory.</p>

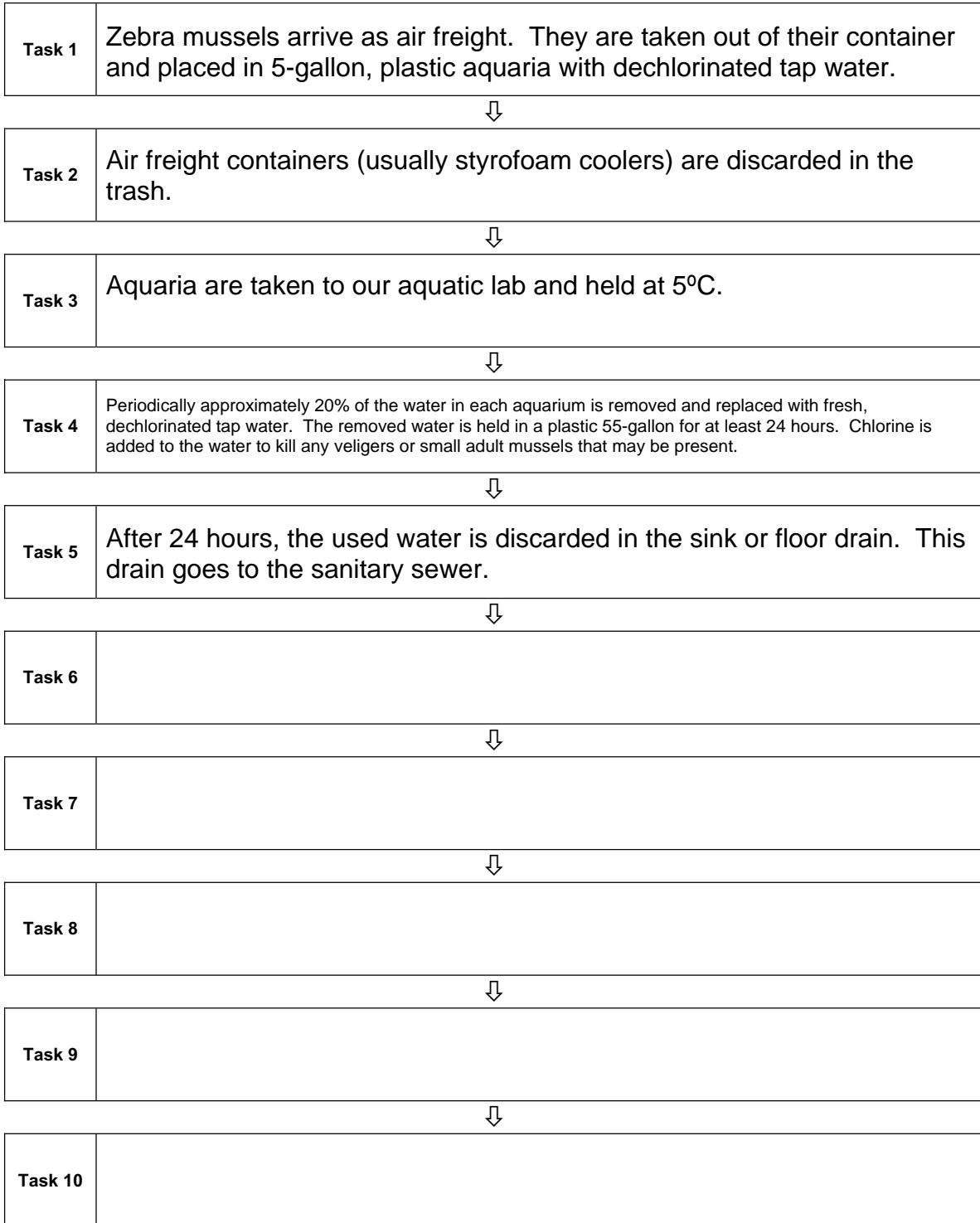
HACCP Step 2 – Identify Potential Hazards

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

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: None
Invertebrates: Zebra Mussels
Plants: None
Other Biologics (e.g. disease, pathogen, parasite): None
Others (e.g. construction materials, etc.): None

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)
Task 1 Zebra mussels arrive as air freight. They are taken out of their container and placed in 5-gallon, plastic aquaria with dechlorinated tap water.	Vertebrates none Invertebrates none Plants none Others none	no no no no			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Task 2 Air freight containers (usually styrofoam coolers) are discarded in the trash.	Vertebrates Invertebrates zebra mussels Plants Others	no	mussels are usually shipped moist, but not in water. Trash will not likely reach suitable habitat for any live mussels.	dump bucket or remove any organism noticed	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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)	
Task 3 Aquaria are taken to our aquatic lab and held at 5°C.	Vertebrates	no	nothing is moved		<input type="checkbox"/>	
	Invertebrates	no			<input type="checkbox"/>	
	Plants	no				<input type="checkbox"/>
	Others	no				<input type="checkbox"/>
Task 4 Periodically approximately 20% of the water in each aquarium is removed and replaced with fresh, dechlorinated tap water. The removed water is held in a plastic 55-gallon for at least 24 hours. Chlorine is added to the water to kill any veligers or small adult mussels that may be present.	Vertebrates none	no			<input type="checkbox"/>	
	Invertebrates zebra mussels	yes	water from zebra mussel tanks may have live zebra mussels in it	Chlorine kills any live animals in the water, prevent spread	<input checked="" type="checkbox"/>	
	Plants none	no			<input type="checkbox"/>	
	Others none	no			<input type="checkbox"/>	

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)
Task 5 After 24 hours, the used water is discarded in the sink or floor drain. This drain goes to the sanitary sewer.	Vertebrates none	no			<input type="checkbox"/>
	Invertebrates zebra mussels	no	if step 4 was followed, chlorine kills all animals.		<input type="checkbox"/>
	Plants none	no			<input type="checkbox"/>
	Others none	no			<input type="checkbox"/>
Task 6	Vertebrates				<input type="checkbox"/>
	Invertebrates				<input type="checkbox"/>
	Plants				<input type="checkbox"/>
	Others				<input type="checkbox"/>

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	Who			
Task 4	zebra mussels	zero tolerance	zebra mussels	examine water for small zebra mussels.	researcher	every time	Treat with chlorine	none

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Address: UTA Box 19498 Arlington, Texas 76109	Date:
Signature:	