

HACCP Electrofishing

HACCP Step 1 – Activity Description

Activity Description	
Facility: ODWC Management/Research Offices	Site: Statewide
Project Coordinator: Barry Bolton	Activity: Electrofishing
Site Manager: Regional/OFRL Supervisors	
Address: 1801 N. Lincoln OKC, OK 73152	
Phone: (405) 521-4646	

Project Description i.e. Who; What; Where; When; How; Why
<p>This HACCP plan covers electrofishing sampling during routine surveys, brood stock collection, research activities, or any other electrofishing activities required of management/research staff.</p>

ELECTROFISHING

HACCP Step 2 – Identify Potential Hazards

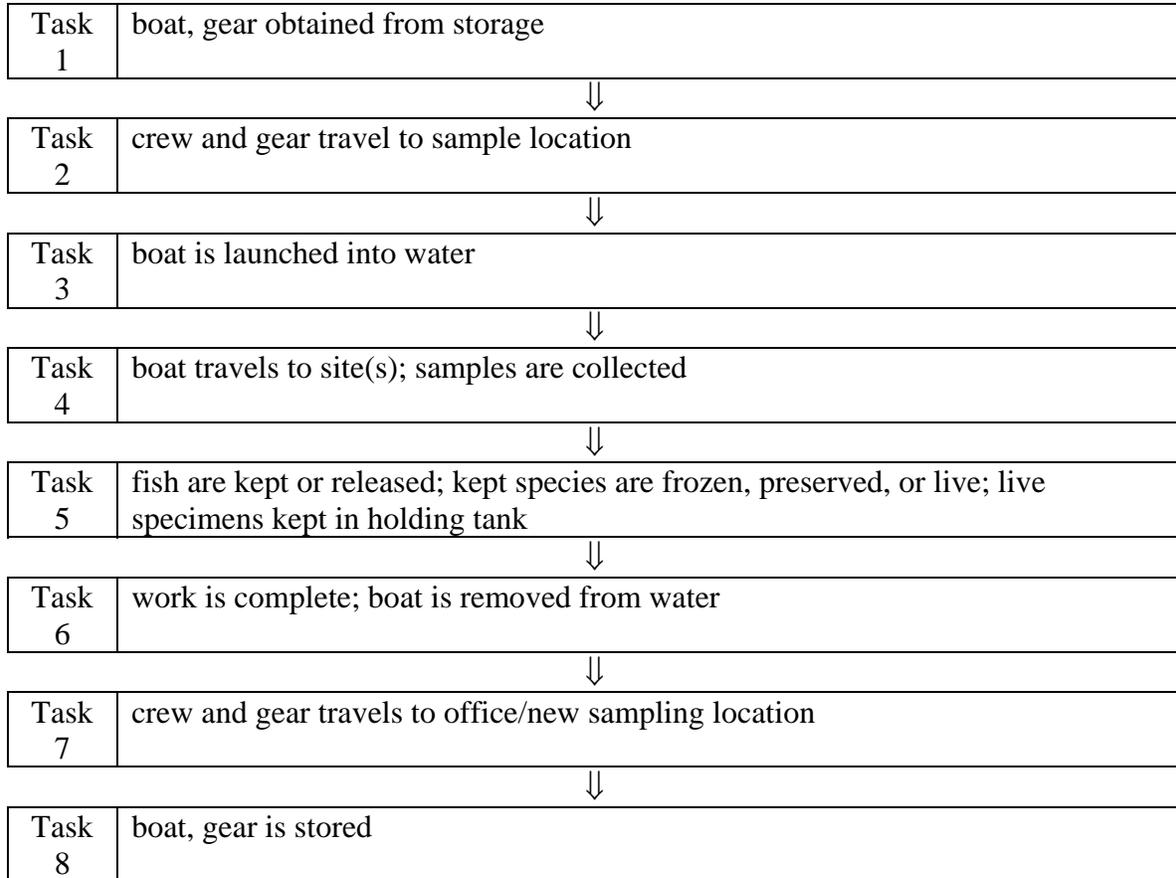
(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled
Invertebrates: spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish
Plants: eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth
Other Biologics (e.g. disease, pathogen, parasite): golden algae, largemouth bass virus
Others (e.g. construction materials, etc.):

ELECTROFISHING

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)
Task 1 boat, gear obtained from storage	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	
	<u>Others</u> golden algae, largemouth bass virus	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
Task 2 crew and gear travel to sample location	<u>Vertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		No
	<u>Invertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Plants</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Others</u>	No			

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 boat is launched into water	<u>Vertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		No
	<u>Invertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Plants</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Others</u>	No	all hazards should have been removed by end of last sampling trip and step 1		

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 4 boat travels to site(s); samples are collected	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	nontarget species could be collected concurrent with target species	visually inspect catch prior to putting in holding tank and remove nontarget species; visually inspect fish in holding tank and remove any nontarget species	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	nontarget organisms could be entrained when filling holding tanks; invertebrates could piggyback on nets during collection of target species	none	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment and remove plants prior to leaving boat ramp	
	<u>Others</u> golden algae, largemouth bass virus	Yes	May be present in water in bilge, holding tanks, motor	none	

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 fish are kept or released; kept species are frozen, preserved, or live; live specimens kept in holding tank	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	visually inspect all fish being transported live and remove all non target organisms; follow HACCP procedures for "Fish Transport" to ensure no nontarget organisms transported during this operation	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	none	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment to ensure no plants are being transported with target species	
	<u>Others</u> golden algae, largemouth bass virus	Yes	May be present in water in bilge, holding tanks, motor	none	

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 6 work is complete; boat is removed from water	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	drain all water from holding tanks to ensure that no nontarget individuals are transported prior to leaving boat ramp	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks/bilge to ensure that no nontarget individuals are transported; visually inspect equipment for adult mussels; run hand along areas of boat and motor that were below the water line to feel for attached mussels	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment, including boat and trailer prior to leaving boat ramp and remove all vegetation	
	<u>Others</u> golden algae, largemouth bass virus	Yes	May be present in water in bilge, holding tanks, motor	treat nets (chlorine dip) prior to next sampling trip; Drain all water; air dry all equipment	

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 7 crew and gear travels to office/new sampling location	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	all control procedures listed under task 8 must be performed prior to launching boat on another water body	No
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	all control procedures listed under task 8 must be performed prior to launching boat on another water body	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	all control procedures listed under task 8 must be performed prior to launching boat on another water body	
	<u>Others</u> golden algae, largemouth bass virus	Yes	may be present in water in bilge, holding tanks, motor	all control procedures listed under task 8 must be performed prior to launching boat on another water body	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 8 boat, gear is stored	<u>Vertebrates</u>	No			Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect and remove all plant material	
	<u>Others</u> golden algae, largemouth bass virus	Yes	may be present in water in bilge, holding tanks, motor	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip(10%) if golden alga is a concern or plan to use equipment before 5-day drying period

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 1 boat, gear obtained from storage	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all equipment	visually	Prior to leaving office	biologist/ technician	Disinfect any equipment found to potentially contain ANS	Note in log, sign

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 4 boat travels to site(s); samples are collected	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	continuous	biologist/ technician	reinspect samples in holding tanks	Note in log, sign

HACCP Plan Form								
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		
Task 5 fish are kept or released; kept species are frozen, preserved, or live; live specimens kept in holding tank	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	continuous	biologist/ technician	reinspect samples in holding tanks; follow HACCP procedures for "Fish Transport" when transporting live specimens	Note in log, sign

HACCP Plan Form								
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		
Task 6 work is complete; boat is removed from water	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually; drain all water on ramp; run hand along portion of boat, motor, and trailer to feel for any attached mussels	on ramp once equipment is loaded	biologist/ technician	reinspect equipment	Note in log, sign

HACCP Plan Form								
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		
Task 8 boat, gear is stored	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	Clean/disinfect	all equipment	visually; run hand along portion of boat, motor, and trailer to feel for any attached mussels	Prior to equipment being used	biologist/ technician	reinspect equipment	Note in log. Sign

Facility:	ODWC Management/Research Offices	Activity:	Electrofishing
Address:	1801 N. Lincoln OKC, OK 73152		
Signature:		Date:	
HACCP Plan was followed.			

HACCP Gill Netting/Trap Netting/Seining

HACCP Step 1 – Activity Description

Activity Description	
Facility: ODWC Management/Research Offices	Site: Statewide
Project Coordinator: Barry Bolton	Activity: Gill netting/Trap netting/Seining
Site Manager: Regional/OFRL Supervisors	
Address: 1801 N. Lincoln OKC, OK 73152	
Phone: (405) 521-4646	

Project Description i.e. Who; What; Where; When; How; Why
<p>This HACCP plan covers gill netting, trap netting, and seining during routine surveys, brood stock collection, research activities, or any other such sampling activities required of management/research staff.</p>

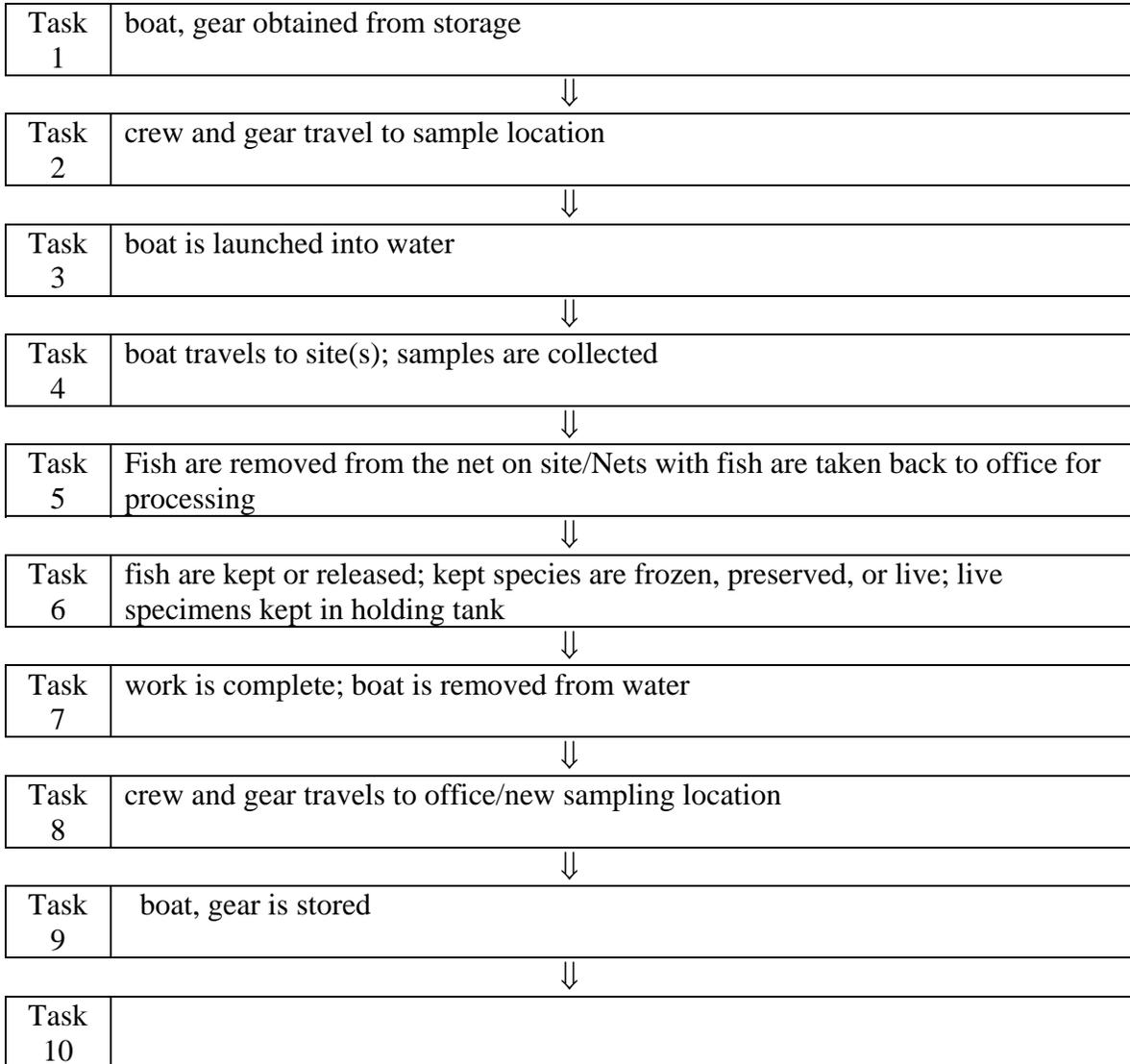
HACCP Step 2 – Identify Potential Hazards

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

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled
Invertebrates: spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish
Plants: eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth
Other Biologics (e.g. disease, pathogen, parasite): golden algae, largemouth bass virus
Others (e.g. construction materials, etc.):

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)
Task 1 boat, gear obtained from storage	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	
	<u>Others</u> golden algae, largemouth bass virus	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
Task 2 crew and gear travel to sample location	<u>Vertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		No
	<u>Invertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Plants</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Others</u>	No	all hazards should have been removed by end of last sampling trip and step 1		

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 boat is launched into water	<u>Vertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		No
	<u>Invertebrates</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Plants</u>	No	all hazards should have been removed by end of last sampling trip and step 1		
	<u>Others</u>	No	all hazards should have been removed by end of last sampling trip and step 1		

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 4 boat travels to site(s); samples are collected	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	nontarget species could be collected concurrent with target species	visually inspect catch prior to putting in holding tank and remove nontarget species; visually inspect fish in holding tank and remove any nontarget species	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	nontarget organisms could be entrained when filling holding tanks; invertebrates could piggyback on nets during collection of target species	none	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment and remove plants prior to leaving boat ramp	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in water in holding tanks	none	

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 Fish are removed from the net on site/Nets with fish are taken back to office for processing	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	Ensure that all fish are either returned to the lake immediately after processing or that all specimens taken back to the office for processing are dead	No (control handled at subsequent steps)
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to nets , boats and/or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water (holding tanks, livewells, bilge) prior to leaving lake	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment to ensure no plants are being transported	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in water in holding tanks	none	

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 6 fish are kept or released; kept species are frozen, preserved, or live; live specimens kept in holding tank	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	visually inspect all fish being transported live and remove all non target organisms; follow HACCP procedures for "Fish Transport" to ensure no nontarget organisms transported during this operation	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water (holding tanks, livewells, bilge) prior to leaving lake	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment to ensure no plants are being transported with target species	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in water in holding tanks	none	

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 7 work is complete; boat is removed from water	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	drain all water from holding tanks to ensure that no nontarget individuals are transported	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks/bilge to ensure that no nontarget individuals are transported; visually inspect equipment for adult mussels; run hand along areas of boat and motor that were below the water line to feel for attached mussels	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment, including boat and trailer prior to leaving boat ramp and remove all vegetation	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in bilge water, holding tanks, cooling water in outboards	Drain all water on boat ramp	

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 8 crew and gear travels to office/new sampling location	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	all control procedures listed under task 9 must be performed prior to launching boat on another water body	No
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	all control procedures listed under task 8 must be performed prior to launching boat on another water body	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	all control procedures listed under task 9 must be performed prior to launching boat on another water body	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in bilge water, holding tanks, cooling water in outboards	all control procedures listed under task 8 must be performed prior to launching boat on another water body	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 9 boat, gear is stored	<u>Vertebrates</u>	No			Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to nets, boat and/or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect and remove all plant material	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in bilge water, holding tanks, cooling water in outboards	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 1 boat, gear obtained from storage	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	Prior to leaving office	biologist/ technician	Disinfect any equipment found to potentially contain ANS	Note in log. Sign

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 4 boat travels to site(s); samples are collected	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	continuous	biologist/ technician	reinspect samples in holding tanks	Note in log. Sign

HACCP Plan Form								
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		
Task 6 fish are kept or released; kept species are frozen, preserved, or live; live specimens kept in holding tank	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurAsian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	continuous	biologist/ technician	reinspect samples in holding tanks; follow HACCP procedures for "Fish Transport" when transporting live specimens	Note in log. Sign

HACCP Plan Form								
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		
Task 7 work is complete; boat is removed from water	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled, spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually; run hand along portion of boat, motor, and trailer to feel for any attached mussels	on ramp once equipment is loaded	biologist/ technician	reinspect equipment	Note in log. Sign

HACCP Plan Form								
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		
Task 9 boat, gear is stored	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	Clean/disinfect	all equipment; nets, boat, trailer, hauling tanks	visually; run hand along portion of boat, motor, and trailer to feel for any attached mussels	Prior to equipment being used	biologist/ technician	reinspect equipment	Note in log. Sign
Facility: ODWC Management/Research Offices						Activity: gill netting, trap netting, and seining		
Address: 1801 N. Lincoln OKC, OK 73152								
Signature:						Date:		
HACCP Plan was followed.								

HACCP Fish Transfers

HACCP Step 1 – Activity Description

Activity Description	
Facility: ODWC Management/Research Offices	Site: Statewide
Project Coordinator: Barry Bolton	Activity: Fish Transfers
Site Manager: Regional/OFRL Supervisors	
Address: 1801 N. Lincoln OKC, OK 73152	
Phone: (405) 521-4646	

Project Description i.e. Who; What; Where; When; How; Why
<p>This HACCP plan covers fish transfer activities on Oklahoma reservoirs and streams that include but are not limited to adult blue catfish transfers, forage introductions (threadfin shad), striped bass relocations, and largemouth and smallmouth bass transfers.</p>

FISH TRANSFERS

HACCP Step 2 – Identify Potential Hazards

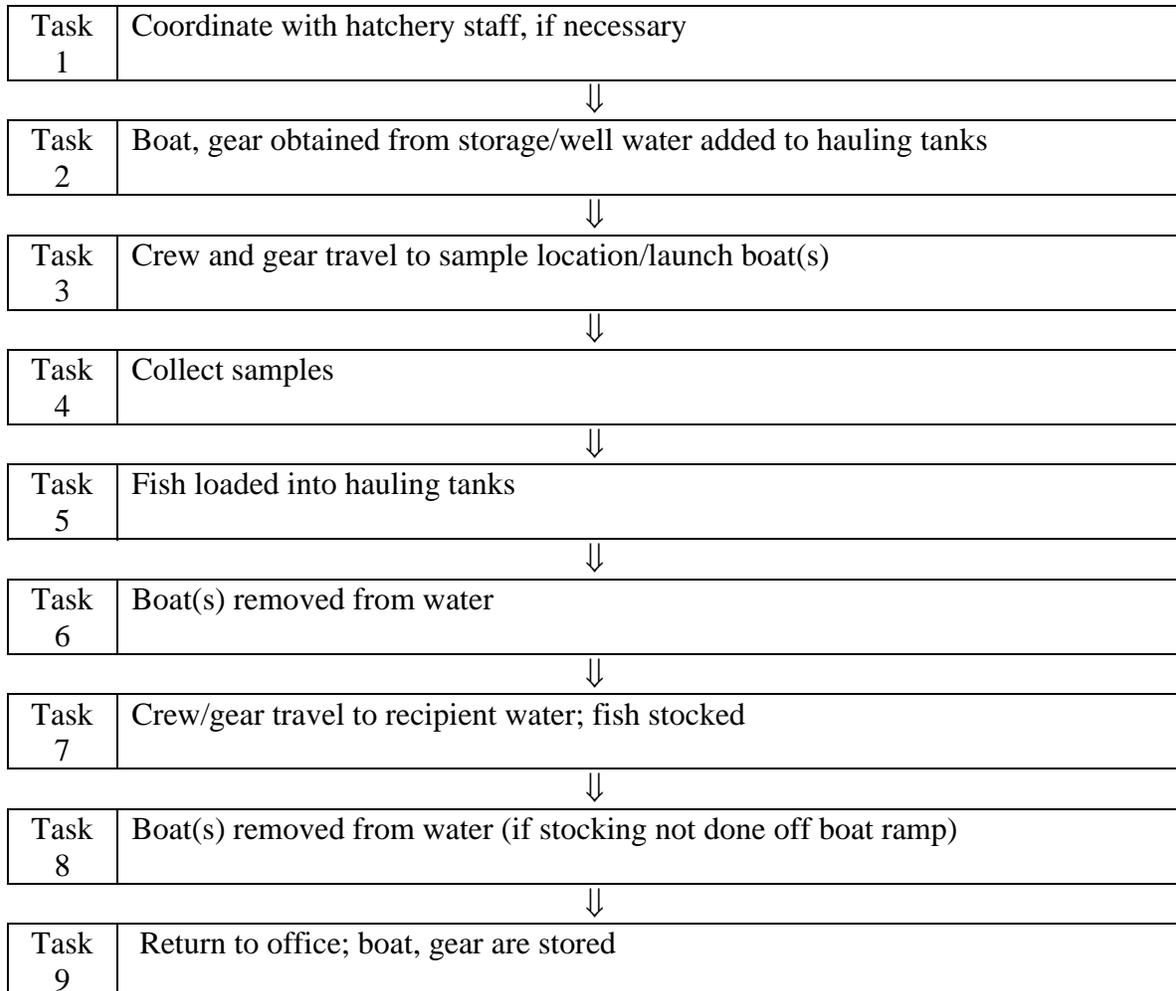
(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled
Invertebrates: spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish
Plants: eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth
Other Biologics (e.g. disease, pathogen, parasite): golden algae, largemouth bass virus
Others (e.g. construction materials, etc.):

FISH TRANSFERS

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)
Task 1 Coordinate with hatchery staff, if necessary	<u>Vertebrates</u>	No	No transfers possible during planning phase		No
	<u>Invertebrates</u>	No	No transfers possible during planning phase		
	<u>Plants</u>	No	No transfers possible during planning phase		
	<u>Others</u>	No	No transfers possible during planning phase		
Task 2 Boat, gear obtained from storage/well water added to hauling tanks	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	
	<u>Others</u> golden algae, largemouth bass virus	Yes	ANS species could remain in holding tank/livewell and/or bilge from previous sampling trip	Inspect boat, holding tank/livewell/bilge for ANS, clean/disinfect if necessary	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip(10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 Crew and gear travel to sample location/launch boat(s)	<u>Vertebrates</u>	No	No ANS should be transferred if inspected under Task 2		No
	<u>Invertebrates</u>	No	No ANS should be transferred if inspected under Task 2		
	<u>Plants</u>	No	No ANS should be transferred if inspected under Task 2		
	<u>Others</u>	No	No ANS should be transferred if inspected under Task 2		
Task 4 Collect samples	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	nontarget species could be collected concurrent with target species	visually inspect catch prior to putting in holding tank and remove nontarget species; visually inspect fish in holding tank and remove any nontarget species	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	nontarget organisms could be entrained when filling holding tanks; invertebrates could piggyback on nets during collection of target species	drain all water from holding tanks, bilges prior to leaving lake; treat all dipnets appropriately prior to next sampling trip (chlorine dip; air dry)	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment and remove plants prior to leaving boat ramp	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in water in holding tanks	treat nets (chlorine dip) prior to next sampling trip; air dry all equipment	

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 Fish loaded into hauling tanks	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	ANS could have been missed during the culling process in Step 4	Visually inspect all fish being transferred and cull nontarget species	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	ANS could be transferred on dip nets and/or water transfer from holding tanks to hauling trucks	Use only well water in hauling truck; Fish transfers from infested waters not allowed	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	Plants that were missed in Step 4 could be transferred to hauling truck	Physically remove all plants from dip nets	
	<u>Others</u> golden algae, largemouth bass virus	Yes	May be present in water in holding tanks	Use only well water in hauling truck; Fish transfers from infested waters not allowed	

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 6 Boat(s) removed from water	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled	Yes	fish species may be misidentified; nontarget species could be inadvertently included with those target species being transported live	drain all water from holding tanks to ensure that no nontarget individuals are transported	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks/bilge to ensure that no nontarget individuals are transported; visually inspect equipment for adult mussels; run hand along areas of boat and motor that were below the water line to feel for attached mussels ; fish transfers from infested waters not allowed	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect all equipment, including boat and trailer prior to leaving boat ramp and remove all vegetation	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could be contained in bilge water, holding tanks, cooling water in outboards	Drain all water on boat ramp; no transfers from infested waters is permitted	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 7 Crew/gear travel to recipient water;	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u>	No			
	<u>Plants</u>	No			
	<u>Others</u>	No			
Task 8 Fish stocked; boat(s) removed from water (if stocking not done off boat ramp)	<u>Vertebrates</u>	No	No vertebrate transfer likely if previous precautions followed		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks/bilge to ensure that no nontarget individuals are transported; visually inspect equipment for adult mussels; run hand along areas of boat and motor that were below the water line to feel for attached mussels	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	Physically inspect all equipment and remove all plants prior to leaving boat ramp	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could survive in all water remaining on or in equipment	all control procedures listed under task 9 must be performed prior to using equipment on another water body	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip(10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 9 boat, gear are stored	<u>Vertebrates</u>	No			Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect and remove all plant material	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could survive in all water remaining on or in equipment	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 2 Boat, gear obtained from storage/well water added to hauling tanks	spiny water fleas, zebra mussels, adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	Prior to leaving office	biologist/technician	Disinfect any equipment found to potentially contain ANS	Note in log; sign

HACCP Plan Form

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		
Task 4 Collect samples	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually determine that only target species are being collected	continually	biologist/ Technician	Physically remove any nontarget species; collect fish for transfer to other waters from only those watersheds known to be free of ANS	Note in log; sign

HACCP Plan Form

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		
Task 5 Fish loaded onto hauling truck	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually determine that only target species are being transferred	continually	biologist/ Technician	Physically remove any nontarget species; collect fish for transfer to other waters from only those watersheds known to be free of ANS	Note in log; sign

HACCP Plan Form

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		
Task 6 Boat(s) removed from water	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the drainage being sampled spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually determine that only target species are being collected	continually	biologist/ technician	Physically remove any nontarget species; collect fish for transfer to other waters from only those watersheds known to be free of ANS	Note in log; sign

HACCP Plan Form

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		
Task 8 Boat(s) removed from water (if stocking not done off boat ramp)	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually determine that no ANS contained on equipment	On boat ramp	biologist/ technician	Physically remove any nontarget species; collect fish for transfer to other waters from only those watersheds known to be free of ANS	Note in log; sign

HACCP Plan Form								
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		
Task 9 Return to office; boat, gear are stored	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurAsian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	Clean/disinfect	all equipment; nets, boat, trailer, hauling tanks	visually; run hand along portion of boat, motor, and trailer to feel for any attached mussels	Prior to equipment being used	biologist/ technician	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chorine bath (10%) for 1 hour	Note in log. Sign
Facility: ODWC Management/Research Offices						Activity: Fish Transfers		
Address: 1801 N. Lincoln OKC, OK 73152								
Signature:						Date:		
HACCP Plan was followed.								

Walleye Spawning

HACCP Step 1 – Activity Description

Activity Description	
Facility: Byron State Fish Hatchery	Site: Canton Lake
Project Coordinator: Steven Spade	Activity: Walleye and saugeye egg collection
Site Manager: John Stahl	
Address: RR 1 Box 530 Byron, OK 73722	
Phone: (580) 474-2663	

Project Description i.e. Who; What; Where; When; How; Why
<p>This HACCP covers the collection of walleye broodstock and subsequent egg removal and fertilization. In early March the Northwest Region management crew with assistance from other regions and hatcheries will set fyke nets in Canton Lake. Then the crew will check nets on a daily basis for the next 30 days. When checking the nets they will remove eligible adult walleye, place in holding tanks, and transport back to the spawning shed on the shore of Canton Lake. The walleye will then be stripped of eggs and semen. These will be mixed in a pan, water added, and then a clay solution added to prevent clumping of the eggs. The eggs will then be rinsed, placed in egg buckets and transported back to the Byron State Fish Hatchery. The hatchery staff will temper the eggs to hatchery water quality parameters and then the eggs will be placed in hatching jars and incubated until hatched.</p>

HACCP Step 2 – Identify Potential Hazards

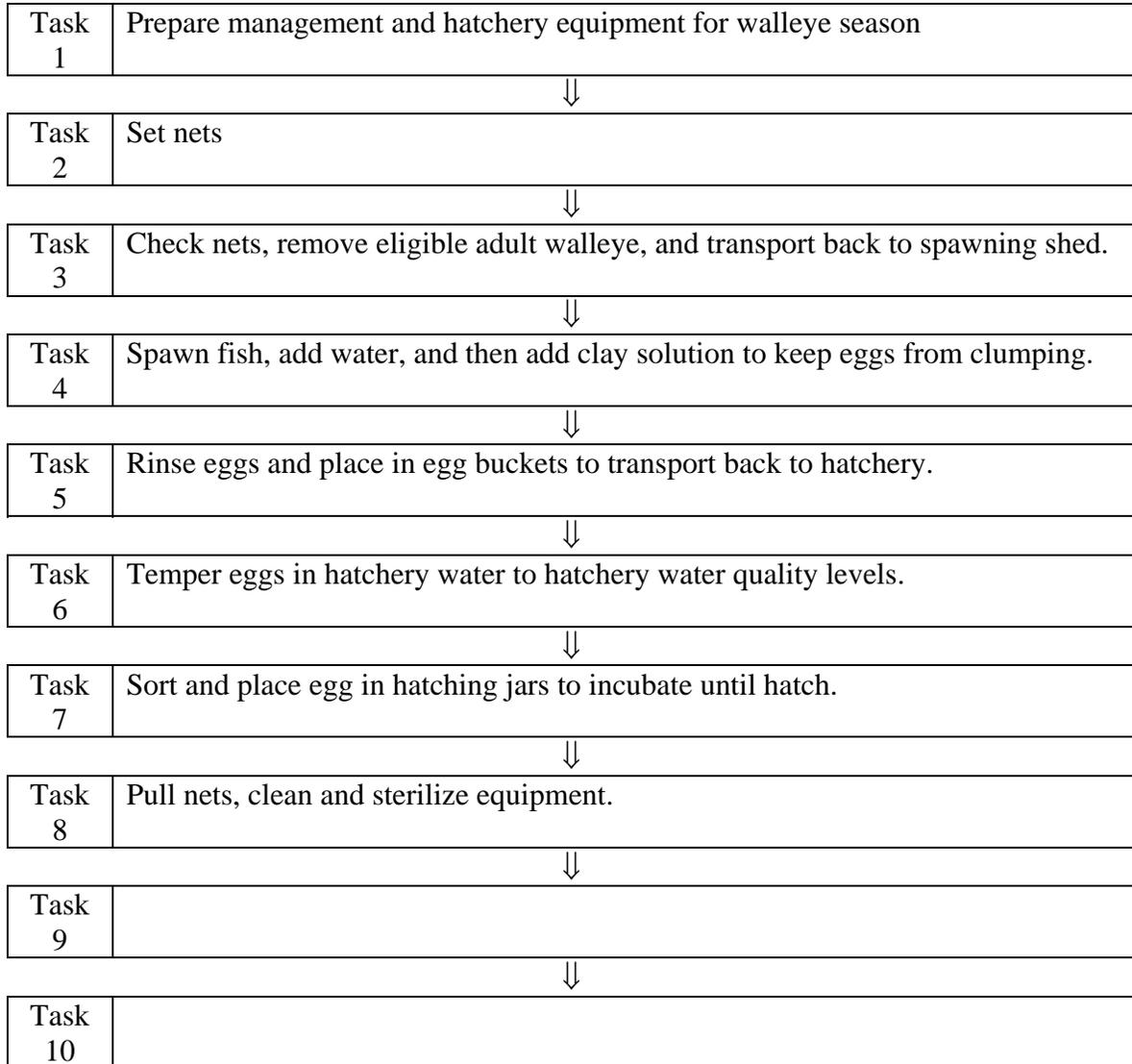
(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: non-target species, Asian carp, inland silversides
Invertebrates: spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish
Plants: Eurasian water milfoil, alligator weed, parrot feather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce
Other Biologics (e.g. disease, pathogen, parasite): Golden alga, LMBV, Enteric redmouth disease, furunculosis
Others (e.g. construction materials, etc.):

Walleye Spawning

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)
-----------------------------------------------------	---------------------------------------------------------	---------------------------------------------------------	-----------------------------------------	------------------------------------------------------------------------------------	------------------------------------------------------------

Task 1 Prepare management and hatchery equipment for walleye season	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u> spiny water fleas, zebra mussels, Asiatic clams, non- native crayfish	Yes	Could be in equipment being prepared for use in walleye spawning	Sterilize equipment	
	<u>Plants</u> Eurasian water milfoil, alligator weed, parrot feather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce	Yes	Same	visually inspect and remove	
	<u>Others</u> Golden alga, LMBV, Enteric redmouth disease, furunculosis	Yes	Same	sterilize equipment	

Task 2 Set nets	<u>Vertebrates</u>	No			Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels, Asiatic clams, non- native crayfish	Yes	Could be in equipment and transported from another water body	Equipment should be sterilized	
	<u>Plants</u> Eurasian water milfoil, alligator weed, parrot feather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce	Yes	Same	Visually inspect and remove.	
	<u>Others</u> Golden alga, LMBV, Enteric redmouth disease, furunculosis	Yes	Same	Equipment should be sterilized.	

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 Check nets, remove eligible adult walleye, and transport back to spawning shed.	<u>Vertebrates</u> non-target species, Asian carp, inland silversides	Yes	Fish could be misidentified and transported back to the spawning shed	Visually inspect and remove	No
	<u>Invertebrates</u> spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish	Yes	Could be present in Canton Lake water	Use well water if discovered to be present in lake	
	<u>Plants</u> Eurasian water milfoil, alligator weed, parrot feather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce	Yes	Same	Visually inspect and remove.	
	<u>Others</u> Golden alga, LMBV, Enteric redmouth disease, furunculosis	Yes	Could be present in Canton Lake water	Use well water if discovered to be present in lake	

Task 4 Spawn fish, add water, and then add clay solution to keep eggs from clumping.	<u>Vertebrates</u>	No	Fish are correctly id'ed		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish	Yes	Could be present in Canton Lake water	Use well water if discovered to be present in lake	
	<u>Plants</u>	No	Have been removed in previous step		
	<u>Others</u> Golden alga, LMBV, Enteric redmouth disease, furunculosis	Yes	Could be present in Canton Lake water	Use well water if discovered to be present in lake	

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 Rinse eggs and place in egg buckets to transport back to hatchery.	<u>Vertebrates</u>	No	Fish are correctly id'ed		No
	<u>Invertebrates</u> spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish	Yes	Could be present in Canton Lake water	Use well water if discovered to be present in lake	
	<u>Plants</u>	No	Have been removed in previous step		
	<u>Others</u> Golden alga, LMBV, Enteric redmouth disease, furunculosis	Yes	Could be present in Canton Lake water	Use well water if discovered to be present in lake	
Task 6 Temper eggs in hatchery water to hatchery water quality levels.	<u>Vertebrates</u>	No	Fish are correctly identified		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish	Yes	Could be present in transport water	Catch rinse water and dispose of off site	
	<u>Plants</u>	No	Have been removed in previous step		
	<u>Others</u> Golden alga, LMBV, Enteric redmouth disease, furunculosis	Yes	Could be present in transport water	Same	

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 7 Sort and place egg in hatching jars to incubate until hatch.	<u>Vertebrates</u>	No	Fish are correctly identified		No
	<u>Invertebrates</u>	No	Very unlikely if previous recommendations were followed		
	<u>Plants</u>	No	Have been removed in previous step		
	<u>Others</u>	No	Very unlikely if previous recommendations were followed		
Task 8 Pull nets, clean and sterilize equipment.	<u>Vertebrates</u>	No	Sterilize equipment prior to next use		No
	<u>Invertebrates</u>	No	same		
	<u>Plants</u>	No	same		
	<u>Others</u>	No	same		

HACCP Plan Form								
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		
Task 2	spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish, Eurasian water milfoil, alligator weed, parrot feather, hydrilla, purple loosestrife,, Golden alga, LMBV, Enteric redmouth disease, furunculosis	Zero Tolerance	Equipment for presence of hazards	Visually inspect	Once	Management and Hatchery Crew	Sterilize equipment	
Task 4	spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish, Golden alga, LMBV, Enteric redmouth disease, furunculosis	Zero Tolerance	Monitor Canton Lake water for hazards if present then take precautions.	Visually inspect and sample water.	3-4 times per year	Management Crew	Use well water to rinse fish and in spawning pan. In task 4 well water will be used presence is indicated during monitoring.	
Task 6	spiny water fleas, zebra mussels, Asiatic clams, non-native crayfish, Golden alga, LMBV, Enteric redmouth disease, furunculosis	Zero Tolerance	fish and water for presence of hazards	Visually inspect	Once	Hatchery Crew	Rinse with well water and dispose of rinse water in safe site.	

Walleye Spawning

Facility: Byron State Fish Hatchery	Activity: Walleye and saugeye egg collection
Address: RR 1 Box 530 Byron, OK 73722	
Signature: HACCP Plan was followed.	Date:

HABITAT DEVELOPMENT

HACCP Habitat Development

HACCP Step 1 – Activity Description

Activity Description	
Facility: ODWC Management/Research Offices	Site: Statewide
Project Coordinator: Barry Bolton	Activity: Habitat development
Site Manager: Regional/OFRL Supervisors	
Address: 1801 N. Lincoln OKC, OK 73152	
Phone: (405) 521-4646	

Project Description i.e. Who; What; Where; When; How; Why
<p>This HACCP plan cover habitat development activities on Oklahoma reservoirs and streams that include but are not limited to brush pile installation, aquatic plant reintroduction, gravel bed installation, shoreline stabilization, and installation of structures that redirect flow.</p> <p>**Most habitat development projects on streams involve use of heavy equipment; many of the procedures in this plan do not apply directly to stream habitat projects. Operators need to be aware of disinfecting procedures for their equipment if being moved between streams without appropriate drying times.</p>

HABITAT DEVELOPMENT

HACCP Step 2 – Identify Potential Hazards

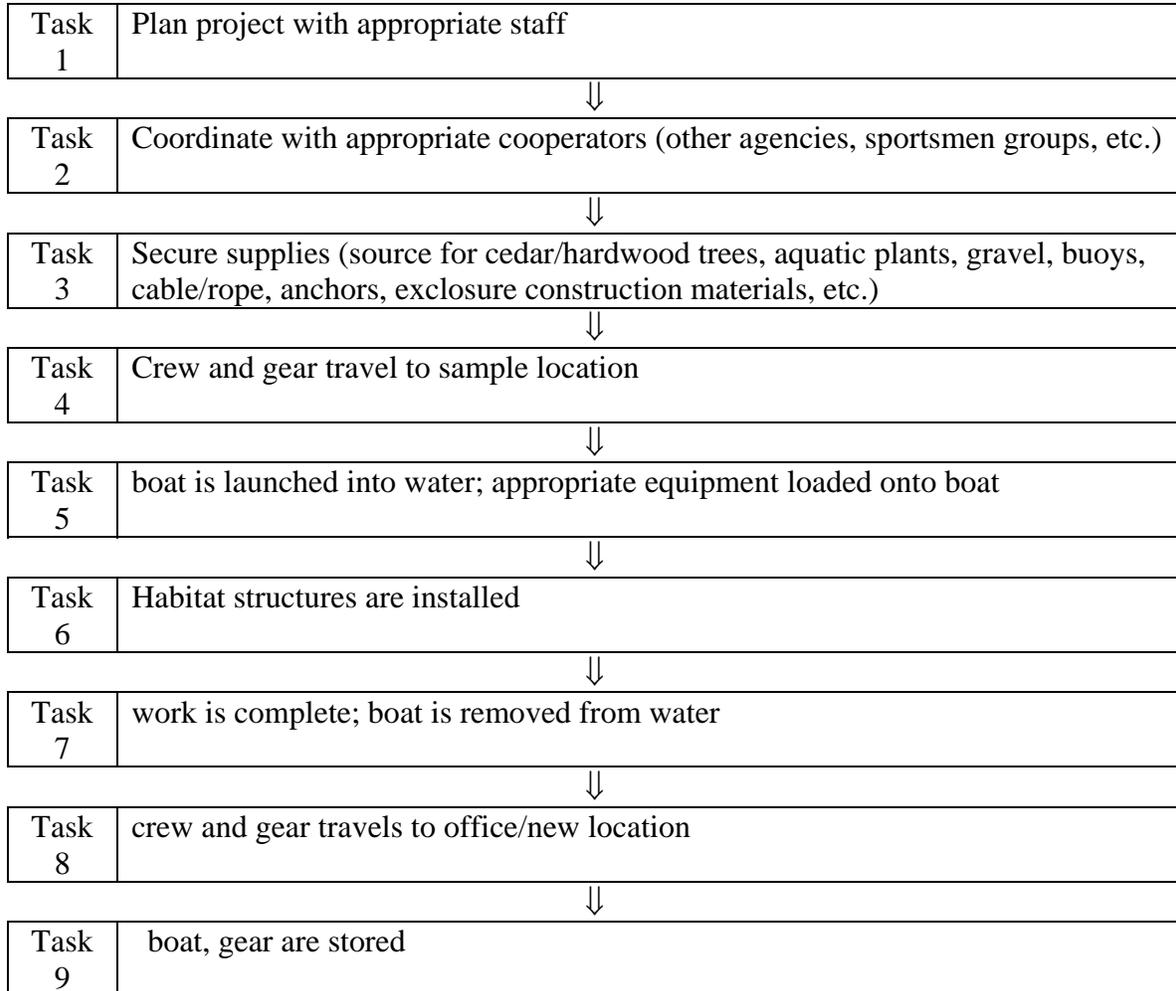
(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates:
Invertebrates: spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish
Plants: eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth
Other Biologics (e.g. disease, pathogen, parasite): golden algae, largemouth bass virus
Others (e.g. construction materials, etc.):

HABITAT DEVELOPMENT

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)
Task 1 Plan project with appropriate staff	<u>Vertebrates</u>	No	No transfers possible during planning phase		No
	<u>Invertebrates</u>	No	No transfers possible during planning phase		
	<u>Plants</u>	No	No transfers possible during planning phase		
	<u>Others</u>	No	No transfers possible during planning phase		
Task 2 Coordinate with appropriate cooperators (other agencies, sportsmen groups, etc.)	<u>Vertebrates</u>	No	No transfers possible during planning phase		No
	<u>Invertebrates</u>	No	No transfers possible during planning phase		
	<u>Plants</u>	No	No transfers possible during planning phase		
	<u>Others</u>	No	No transfers possible during planning phase		

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 Secure supplies (source for cedar/hardwood trees, aquatic plants, gravel, buoys, cable/rope, anchors, exclosure construction materials, etc.)	<u>Vertebrates</u>	No	No vertebrates should piggyback on target plants		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	Non-native invertebrates may piggyback on aquatic plants	Visually inspect and remove all invertebrates (particularly snails)	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	Non-native plants may piggyback on target plants	Visually inspect and remove all nontarget plants	
	<u>Others</u> golden algae, largemouth bass virus	Yes	May infest water that plants obtained from	No transfer of plants from infested waters allowed	
Task 4 Crew and gear travel to sample location	<u>Vertebrates</u>	No	No ANS should be transferred if inspected under Task 3		No
	<u>Invertebrates</u>	No	No ANS should be transferred if inspected under Task 3		
	<u>Plants</u>	No	No ANS should be transferred if inspected under Task 3		
	<u>Others</u>	No	No ANS should be transferred if inspected under Task 3		

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 boat is launched into water; appropriate equipment loaded onto boat	<u>Vertebrates</u>	No	No ANS should be transferred if inspected under Task 3		No
	<u>Invertebrates</u>	No	No ANS should be transferred if inspected under Task 3		
	<u>Plants</u>	No	No ANS should be transferred if inspected under Task 3		
	<u>Others</u>	No	No ANS should be transferred if inspected under Task 3		
Task 6 Habitat structures are installed	<u>Vertebrates</u>	No	No ANS should be transferred if inspected under Task 3		No
	<u>Invertebrates</u>	No	No ANS should be transferred if inspected under Task 3		
	<u>Plants</u>	No	No ANS should be transferred if inspected under Task 3		
	<u>Others</u>	No	No ANS should be transferred if inspected under Task		

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 7 work is complete; boat is removed from water	<u>Vertebrates</u>	No	No vertebrate transfer likely		
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to equipment and remain alive if kept moist	drain all water from holding tanks/bilge to ensure that no nontarget individuals are transported; visually inspect equipment for adult mussels; run hand along areas of boat and motor that were below the water line to feel for attached mussels	Yes
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on equipment, i.e. boat, trailer	visually inspect all equipment, including boat and trailer prior to leaving boat ramp and remove all vegetation	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could survive in all water remaining on or in equipment	Drain all water in bilge and on equipment	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 8 crew and gear travels to office/new location	<u>Vertebrates</u>	No	No vertebrate transfer likely		No
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	all control procedures listed under task 9 must be performed prior to launching boat on another water body	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	all control procedures listed under task 9 must be performed prior to launching boat on another water body	
	<u>Others</u> golden algae, largemouth bass virus	Yes	could survive in all water remaining on or in equipment	all control procedures listed under task 9 must be performed prior to launching boat on another water body	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 9 boat, gear are stored	<u>Vertebrates</u>	No			Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish	Yes	invertebrates may be contained in holding tank/bilge water; adult mussels may attach to boat and or trailer if left in water; spiny water fleas or mussel veligers could attach to dipnets and remain alive if nets are kept moist	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	plants could be entangled on sampling equipment, i.e. dipnets, boat, trailer	visually inspect and remove all plant material	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Could survive in all water remaining on or in equipment	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 3 Secure supplies (source for cedar/hardwood trees, aquatic plants, gravel, buoys, cable/rope, anchors, enclosure construction materials, etc.)	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually	Prior to leaving office	biologist/ technician	Disinfect any equipment found to potentially contain ANS	Note in log, sign

HACCP Plan Form

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		
Task 7 work is complete; boat is removed from water	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non- native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all procedures	visually; run hand along portion of boat, motor, and trailer to feel for any attached mussels; remove all aquatic vegetation from equipment	On ramp once equipment is loaded	biologist/ technician	Physically remove any ANS prior to leaving boat ramp	Note in log, sign

HACCP Plan Form								
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		
Task 9 boat, gear are stored	spiny water fleas, zebra mussels adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all equipment	visually; run hand along portion of boat, motor, and trailer to feel for any attached mussels; remove all aquatic vegetation; Disinfect all equipment	after equipment has been treated with appropriate control measures	biologist/ technician	reinspect equipment	Note in log. Sign
Facility: ODWC Management/Research Offices						Activity: Habitat Development		
Address: 1801 N. Lincoln OKC, OK 73152								
Signature: HACCP Plan was followed.						Date:		

WATER QUALITY

HACCP Water Quality

HACCP Step 1 – Activity Description

Activity Description	
Facility: ODWC Management/Research Offices	Site: Statewide
Project Coordinator: Barry Bolton	Activity: Water Quality Testing
Site Manager: Regional/OFRL Supervisors	
Address: 1801 N. Lincoln OKC, OK 73152	
Phone: (405) 521-4646	

Project Description i.e. Who; What; Where; When; How; Why
This HACCP plan covers all ODWC water quality testing on all state waters.

WATER QUALITY

HACCP Step 2 – Identify Potential Hazards

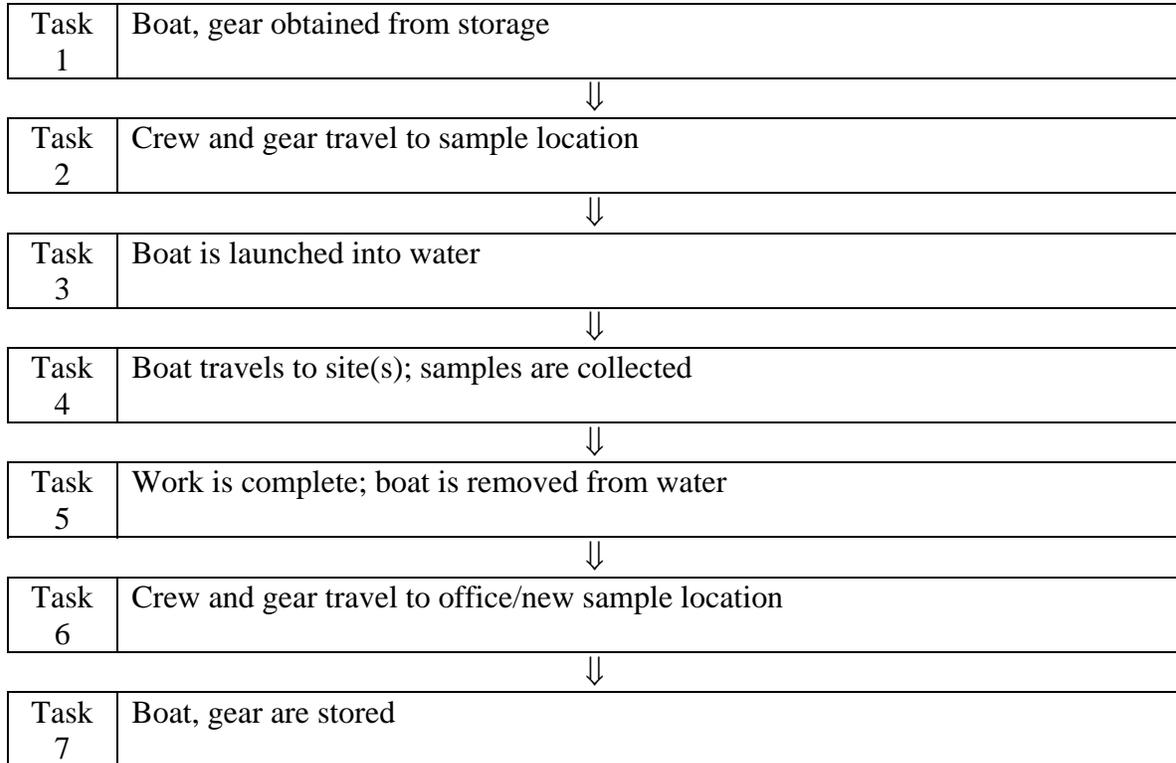
(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates:
Invertebrates: spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish
Plants: eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth
Other Biologics (e.g. disease, pathogen, parasite): golden algae, largemouth bass virus
Others (e.g. construction materials, etc.):

WATER QUALITY

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)
Task 1 Boat, gear obtained from storage	<u>Vertebrates</u>	No	Vertebrates unlikely to piggyback on sampling equipment.		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	Possibility that ANS could survive on equipment that remains moist.	Drain all water from equipment; air dry all equipment for 5 days; dip equipment in chlorine bath	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	Possibility that plants could piggyback on sampling equipment.	Visually inspect and remove all plants from equipment.	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Possibility that plants could piggyback on sampling equipment.	Drain all water from equipment; air dry all equipment for 5 days; dip equipment in chlorine bath.	
Task 2 Crew and gear travel to sample location	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u>	No	All ANS should have been eliminated in task 1.		
	<u>Plants</u>	No	All ANS should have been eliminated in task 1.		
	<u>Others</u>	No	All ANS should have been eliminated in task 1.		

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

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 Boat is launched into water	<u>Vertebrates</u>	No	All ANS should have been eliminated in task 1.		No
	<u>Invertebrates</u>	No	All ANS should have been eliminated in task 1.		
	<u>Plants</u>	No	All ANS should have been eliminated in task 1.		
	<u>Others</u>	No	All ANS should have been eliminated in task 1.		
Task 4 Boat travels to site(s); samples are collected	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native to the drainage being sampled	Yes	Vertebrates unlikely to piggyback on sampling equipment.		No
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	Possibility that non-target species could be inadvertently collected with samples.	Visually inspect; remove non-target species.	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	Possibility that non-target species could be inadvertently collected with samples.	Visually inspect; remove all plants from equipment.	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Possibility that non-target species could be inadvertently collected with samples.	none	

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 Work is complete; boat is removed from water	<u>Vertebrates</u>	No	Vertebrates unlikely to piggyback on sampling equipment.		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	Possibility that non-target species could be inadvertently collected with samples.	Prior to leaving boat ramp; visually inspect all equipment; drain water from equipment	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	Possibility that non-target species could be inadvertently collected with samples.	Prior to leaving boat ramp: visually inspect all equipment; drain water from equipment; physically remove all plants.	
	<u>Others</u> golden algae, largemouth bass virus	Yes	Possibility that non-target species could be inadvertently collected with samples.	Prior to leaving boat ramp; drain water from all equipment	

Task 6 Crew and gear travel to office/new sample location	<u>Vertebrates</u>	No	Vertebrates unlikely to piggyback on sampling equipment.		No
	<u>Invertebrates</u>	No	ANS should be removed in task 5; do not proceed to another body of water prior to completing control steps in task 7.		
	<u>Plants</u>	No	ANS should be removed in task 5; do not proceed to another body of water prior to completing control steps in task 7.		
	<u>Others</u>	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)
Task 7 Boat, gear are stored	<u>Vertebrates</u>	No	Vertebrates unlikely to piggyback on sampling equipment.		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	ANS could survive in/on equipment that is kept moist.	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth	Yes	ANS could have escaped detection in step 5	Physically inspect all equipment; remove all plants.	
	<u>Others</u> golden algae, largemouth bass virus	Yes	ANS could survive in/on equipment that is kept moist.	drain all water from holding tanks, livewells, bilge; high pressure wash with 140 degree water; air dry for 5 days; chlorine bath (10%) for 1 hour	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip(10%) if golden alga is a concern or plan to use equipment before 5-day drying period

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 1	spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all equipment/procedures	visually	prior to leaving office	biologist/technician	retreat equipment	Note in log, sign

HACCP Plan Form								
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		
Task 5	spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all equipment/procedures	visually	prior to leaving boat ramp	biologist/technician	treat equipment upon returning to office	Note in log, sign

HACCP Plan Form								
			Monitoring					
Critical Control Point (CCP)	Significant Hazard(s)	Limits for each Control Measure	What	How	Frequency	Who	Evaluation & Corrective Action(s) (if needed)	Supporting Documentation (if any)
Task 7	spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, golden algae, largemouth bass virus	zero tolerance	all equipment/procedures	visually	upon returning to office and prior to next sampling trip	biologist/technician	retreat equipment	Note in log, sign
Facility:	ODWC Management/Research Offices					Activity:	Water Quality Testing	
Address:	1801 N. Lincoln OKC, OK 73152							
Signature:						Date:		
HACCP Plan was followed.								

FISH KILL INVESTIGATION

HACCP Plan Fish Kill

HACCP Step 1 – Activity Description

Activity Description	
Facility: ODWC Management/Research Offices	Site: Statewide
Project Coordinator: Barry Bolton	Activity: Fish Kill Investigations
Site Manager: Regional/OFRL Supervisors	
Address: 1801 N. Lincoln OKC, OK 73152	
Phone: (405) 521-4646	

Project Description i.e. Who; What; Where; When; How; Why
This HACCP plan covers activities involved in fish kill investigations.

FISH KILL INVESTIGATION

HACCP Step 2 – Identify Potential Hazards

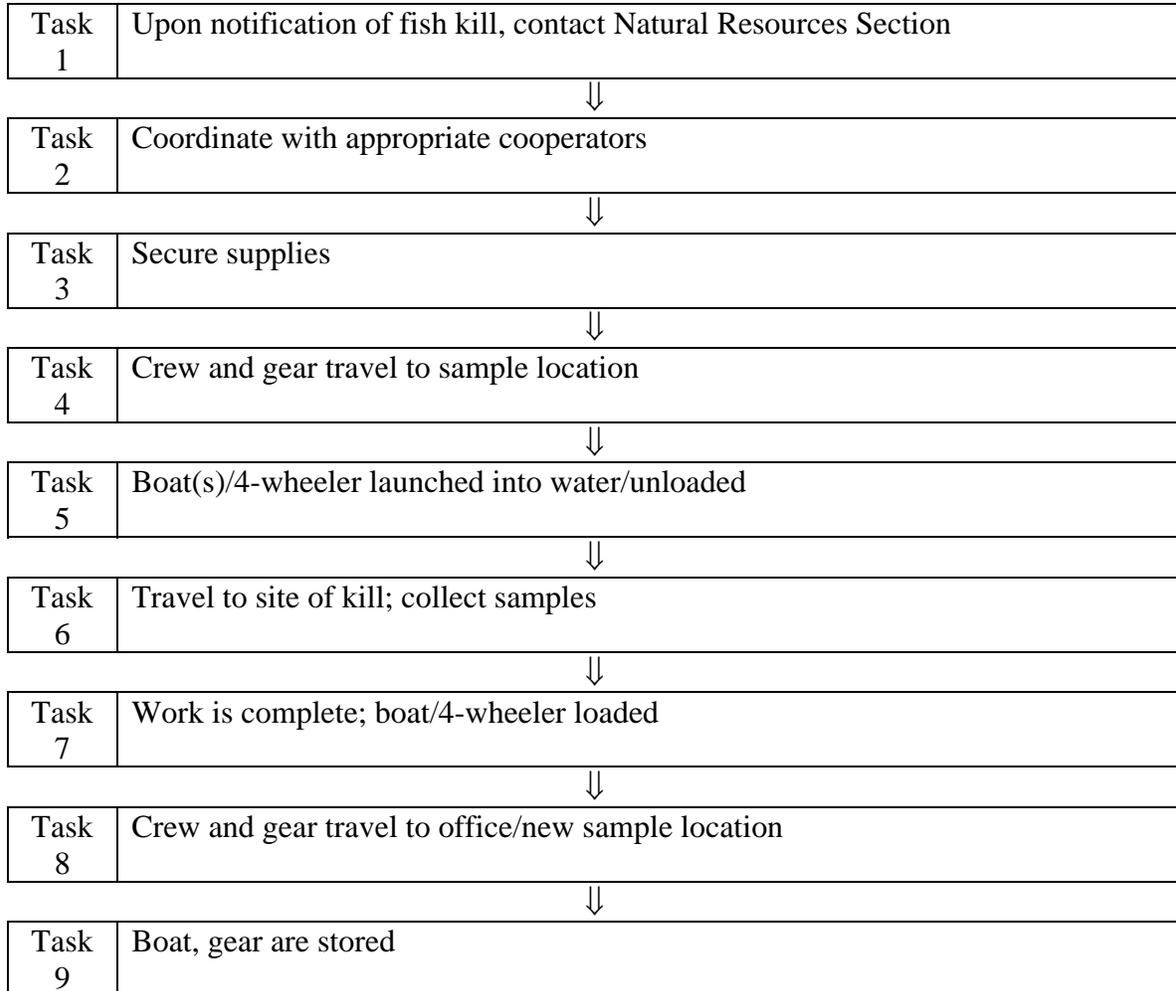
(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the watershed being sampled
Invertebrates: spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish
Plants: eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed
Other Biologics (e.g. disease, pathogen, parasite): golden algae, largemouth bass virus
Others (e.g. construction materials, etc.):

FISH KILL INVESTIGATION

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)
Task 1 Upon notification of fish kill, contact Natural Resources Section	<u>Vertebrates</u>	No	no threat during coordination phase		No
	<u>Invertebrates</u>	No	no threat during coordination phase		
	<u>Plants</u>	No	no threat during coordination phase		
	<u>Others</u>	No	no threat during coordination phase		
Task 2 Coordinate with appropriate cooperators	<u>Vertebrates</u>	No	no threat during coordination phase		No
	<u>Invertebrates</u>	No	no threat during coordination phase		
	<u>Plants</u>	No	no threat during coordination phase		
	<u>Others</u>	No	no threat during coordination phase		

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 Secure supplies	<u>Vertebrates</u>	No	no live vertebrates would be collected during previous fish kill investigations		Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	may have piggybacked on equipment during previous investigations	air dry equipment for 5 days; dip equipment in chlorine bath (10%)	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed	Yes	may have piggybacked on equipment during previous investigations	physically remove all plant material from equipment	
	<u>Others</u> golden algae, largemouth bass virus	Yes	may have piggybacked on equipment during previous investigations	air dry equipment for 5 days; dip equipment in chlorine bath (10%)	
Task 4 Crew and gear travel to sample location	<u>Vertebrates</u>	No	hazards should have been eliminated during task 3		No
	<u>Invertebrates</u>	No	hazards should have been eliminated during task 3		
	<u>Plants</u>	No	hazards should have been eliminated during task 3		
	<u>Others</u>	No	hazards should have been eliminated during task 3		

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

FISH KILL INVESTIGATION

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 Boat(s)/4-wheeler launched into water/unloaded	<u>Vertebrates</u>	No	hazards should have been eliminated during task 3		No
	<u>Invertebrates</u>	No	hazards should have been eliminated during task 3		
	<u>Plants</u>	No	hazards should have been eliminated during task 3		
	<u>Others</u>	No	hazards should have been eliminated during task 3		
Task 6 Travel to site of kill; collect samples	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native to the watershed being sampled	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	visually inspect all samples; remove non-target species	No
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	visually inspect all samples; remove non-target species	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	visually inspect all samples; remove non-target species	
	<u>Others</u> golden algae, largemouth bass virus	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	none	

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 7 Work is complete; boat/4-wheeler loaded	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the watershed being sampled	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	visually inspect equipment on boat ramp/prior to loading 4-wheeler; remove all non-target species	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	drain all water from equipment; visually inspect equipment on boat ramp/prior to loading 4-wheeler; remove all non-target species	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed	Yes	non-target organisms may be inadvertently collected/attached to equipment during sample collection	visually inspect equipment on boat ramp/prior to loading 4-wheeler; remove all plants	
	<u>Others</u> golden algae, largemouth bass virus	Yes		drain all water from equipment	

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 8 Crew and gear travel to office/new sample location	<u>Vertebrates</u>	No	ANS may have been overlooked during inspection in Task 7	Control measures listed under Task 9 must be completed prior to sampling new location	No
	<u>Invertebrates</u>	No	ANS may have been overlooked during inspection in Task 7; ANS may survive in water contained in sampling gear	Control measures listed under Task 9 must be completed prior to sampling new location	
	<u>Plants</u>	No	ANS may have been overlooked during inspection in Task 7	Control measures listed under Task 9 must be completed prior to sampling new location	
	<u>Others</u>	No		Control measures listed under Task 9 must be completed prior to sampling new location	

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 9 Boat, gear are stored	<u>Vertebrates</u> white perch, asian carp, inland silversides, any other non-target species not native to the watershed being sampled	Yes	ANS may have been overlooked during inspection in Task 7	Drain all water from equipment; visually inspect and remove ANS	Yes
	<u>Invertebrates</u> spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish	Yes	ANS may have been overlooked during inspection in Task 7; ANS may survive in water contained in sampling gear	Drain all water from equipment; air dry for 5 days; dip all equipment in chlorine bath	
	<u>Plants</u> eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed	Yes	ANS may have been overlooked during inspection in Task 7	Drain all water from equipment; visually inspect and remove all plants	
	<u>Others</u> golden algae, largemouth bass virus	Yes	ANS may have been overlooked during inspection in Task 7	Drain all water from equipment; air dry for 5 days; dip all equipment in chlorine bath	

*Heated power wash (140°) or air dry for 5 days will kill zebra mussels and LMBV; must use chlorine dip (10%) if golden alga is a concern or plan to use equipment before 5-day drying period

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form								
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		
Task 3 Secure supplies	spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed, golden algae, largemouth bass virus	zero tolerance	all equipment	visual inspection; ensure all equipment was properly treated prior to storage from previous sampling	prior to each sampling trip	biologist/ technician	retreat all equipment	note in log, sign

FISH KILL INVESTIGATION

HACCP Plan Form								
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		
Task 7 Work is complete; boat/4-wheeler loaded	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the watershed being sampled, spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed, golden algae, largemouth bass virus	zero tolerance	all equipment	visual inspection	on boat ramp/prior to loading equipment	biologist/ technician	physically remove all ANS	note in log, sign

HACCP Plan Form								
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		
Task 9 Boat, gear are stored	white perch, asian carp, inland silversides, any other non-target species not native or naturalized to the watershed being sampled, spiny water fleas, zebra mussel adults and veligers, asiatic clams, non-native crayfish, eurasian watermilfoil, alligator weed, parrotfeather, hydrilla, purple loosestrife, salvinia, water clover, water lettuce, water hyacinth, any other plant not native to watershed, golden algae, largemouth bass virus	zero tolerance	all equipment	visual inspection	upon return from each sampling trip	biologist/ technician	physically remove all ANS; air dry equipment for 5 days; dip equipment in chlorine bath	note in log, sign
Facility:	ODWC Management/Research Offices					Activity:	Fish Kill Investigations	
Address:	1801 N. Lincoln OKC, OK 73152							
Signature: HACCP Plan was followed.						Date:		

