HACCP Step 1 – Activity Description

Activity Description	
Facility: AZ G&F Region IV	Site: Region IV
Project Coordinator: Wm. Bradford Jacobson	Activity/Management Objective: Prevent the transfer of nuisance species among Regional waters during fish population surveys
Site Manager: Wm. Bradford Jacobson	
Address: 9140 E. 28th St. Yuma, AZ 85365	
Phone: (928) 342-0091	

Project Description

i.e. Who; What; Where; When; How; Why

Who: Region IV Fisheries Program personnel

What: We wish to prevent nuisance species transfer among Regional waters during scheduled surveys.

Where: Seasonal population surveys involve sampling of multiple waters during a survey season, including all or a subset of: Alamo Lake, Lake Havasu, Parker Strip, the Palo Verde, Cibola, Imperial and Yuma Divisions of the Colorado River, Mittry Lake, Fortuna Pond and Redondo Lake.

When: Surveys are conducted annually. Spring surveys are completed in April, May and June, fall surveys in October and November, and winter surveys in February (Lake Havasu only).

How: Spring and fall electrofishing surveys are conducted employing a boat-mounted unit. Trammel nets are used for the winter surveys. Risk of transporting nuisance species will be reduced or eliminated from the electrofishing surveys by a couple of means. First, bodies of water to be sampled will be arranged chronologically so that the waters with the least probability of holding nuisance species are surveyed first, while those of greatest probability are surveyed last. Currently, this entails surveying waters outside of Giant Salvinia-infested areas first, typically lakes and the upper Divisions of the Lower Colorado River in Region IV. Second, electrofishing equipment used will be cleaned to remove nuisance species that might be transported to non-infected waters. In the field, this will be accomplished by emptying the livewell of all water and live material after each survey and airing it to dry completely. The bilge will be drained after each survey on the inclined ramp at the survey location. Additionally, when moving from infected waters to uninfected waters, we will use a hot-steam pressure washer on dip nets, measuring board, scale pan, anode, boat, trailer, and towing vehicle at the Regional office. Fresh water will be run through outdrive engines to remove lake or river water from within the cooling system. Trammel nets will be spread, dried, and plant or animal material removed by hand after each use, and then stored in an open container for a sufficient amount of time to sufficiently desiccate any remaining material.

Why: To reduce or eliminate the spread of nuisance species. As stewards of the resource, it is important that we make every effort to make sure that we aren't the vector. We need to be part of the solution, not the problem.

HACCP Step 2 – Identify Potential Hazards

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

Vertebrates: Fish, amphibians and turtles in all life stages
Invertebrates: Aquatic invertebrates and zooplankton (such as zebra mussels, New Zealand mudsnails, apple snails, crayfish and undesirable zooplankton)
Plants: Aquatic macrophytes [such as Giant Salvinia, Hydrilla, watermilfoils (Eurasian and Parrot feather), pondweeds, naiads, Coontail] and phytoplankton (such as golden algae, filamentous and blue-green algae)
Other Biologics (e.g. genetics, disease, pathogen, parasite, or non-pathogens): Fish parasites (such as Eurasian tapeworm, leeches and flukes, anchorworms, etc.)
Others (non-biological contaminants e.g. pesticide residue, oil products, etc. or harborage via packing or construction materials, etc.): Gas, oil

HACCP Step 3 – Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project
Described in HACCP Step 1 – Activity Description
(to be transferred to column 1 of the HACCP Step 4 – Hazard Analysis Worksheet)

Task 1	Pre-survey inspection of equipment, vehicles, boat and trailer at Regional office
⇓	
Task 2	Transfer to water body and conduct the survey
⇓	
Task 3	Conduct surveys at multiple sites in large systems where transfer of undesirables may occur
⇓	
Task 4	Visual inspection upon leaving the ramp following the survey (boat, trailer, truck, drain bilge and livewell and survey equipment). Remove fragments of vegetation and other organic materials
⇓	
Task 5	Complete cleaning of equipment before deploying on a different body of water (either field approach, or full facility office approach)
⇓	
Task 6	
⇓	
Task 7	
⇓	
Task 8	
⇓	
Task 9	
⇓	
Task 10	

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 significant? (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 Pre-survey inspection of equipment, vehicles, boat and trailer at Regional office	Vertebrates Fish, amphibians and turtles	No	Desiccation, heat and removal of all standing water eliminates likelihood of survival, large organisms are easy to detect and remove		N/A
	Invertebrates Aquatic invertebrates and zooplankton	Yes	Mollusks and zooplankton cysts may survive periods of desiccation	Visually inspect for organisms and remove, ensure equipment is dry	Yes
	Plants Aquatic macrophytes, algae and phytoplankton	Yes	Plant materials, seeds and spores may survive periods of desiccation	Visually inspect for organisms and remove, ensure equipment is dry	Yes
	Others Biologics Aquatic parasites	No	Desiccation, heat and removal of all standing water eliminates likelihood of survival		N/A
	Others Gas, oil	No	Equipment is well maintained and cleaned		N/A
Task 2 Transfer to water body and conduct the survey	Vertebrates Aquatic invertebrates and zooplankton	No	Likelihood of re-infection during transit is remote		N/A
	Invertebrates Aquatic invertebrates and zooplankton	No	Likelihood of re-infection during transit is remote		N/A
	Plants Aquatic macrophytes, algae and phytoplankton	No	Likelihood of re-infection during transit is remote		N/A

	Others Biologics Aquatic parasites	No	Likelihood of re-infection during transit is remote		N/A
	Others Gas, oil	No	Likelihood of re-infection during transit is remote		N/A

HACCP Step 4 - Hazard Analysis Worksheet (continued)

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant ? (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 Conduct surveys at multiple sites in large systems where transfer of undesirables may occur	Vertebrates Fish, amphibians and turtles	Yes	Boat, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat and equipment, remove detected materials, drain livewell	No
	Invertebrates Aquatic invertebrates and zooplankton	Yes	Boat, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat and equipment, remove detected materials, drain livewell	No
	Plants Aquatic macrophytes, algae and phytoplankton	Yes	Boat, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat and equipment, remove detected materials, drain livewell	No
	Others Biologics Aquatic parasites	Yes	Boat, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat and equipment, remove detected materials, drain livewell	No
	Others Gas, oil	No	Equipment maintained in a sparkling manner		N/A
Task 4 Visual inspection upon leaving the ramp following the	Vertebrates Fish, amphibians and turtles	Yes	Boat, trailer, truck, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat, trailer, truck and survey equipment, remove detected materials, drain bilge and livewell, rinse and dry equipment	No

survey (boat, trailer, truck, drain bilge and livewell and survey equipment). Remove fragments of vegetation and other organic materials	Invertebrates Aquatic invertebrates and zooplankton	Yes	Boat, trailer, truck, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat, trailer, truck and survey equipment, remove detected materials, drain bilge and livewell, rinse and dry equipment	No
	Plants Aquatic macrophytes, algae and phytoplankton	Yes	Boat, trailer, truck, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat, trailer, truck and survey equipment, remove detected materials, drain bilge and livewell, rinse and dry equipment	No
	Others Biologics Aquatic parasites	Yes	Boat, trailer, truck, livewell, nets and equipment may harbor nuisance species as a result of the survey	Conduct “field” cleaning: Visually inspect boat, trailer, truck and survey equipment, remove detected materials, drain bilge and livewell, rinse and dry equipment	No
	Others Gas, oil	No	Equipment is maintained immaculately		N/A

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant ? (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 Complete cleaning of equipment before deploying on a different body of water (either field approach, or full facility office approach)	Vertebrates Fish, amphibians and turtles	No	Desiccation, heat and removal of all standing water eliminates likelihood of survival, large organisms are easy to detect and remove		N/A
	Invertebrates Aquatic invertebrates and zooplankton	Yes	Mollusks and zooplankton cysts may survive periods of desiccation	Visually inspect for organisms and remove, ensure equipment is dry, steam pressure washer used in facility approach	Yes
	Plants Aquatic macrophytes, algae and phytoplankton	Yes	Plant materials, seeds and spores may survive periods of desiccation	Visually inspect for organisms and remove, ensure equipment is dry, steam pressure washer used in facility approach	Yes
	Others Biologics Aquatic parasites	No	Desiccation, heat and removal of all standing water eliminates likelihood of survival		N/A
	Others Gas, oil	No	Equipment is well maintained and cleaned		N/A

For additional pages, select entire page and copy to a new page.

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form (all CCP's or "yes's" from column 6 of HACCP Step 4 – Hazard Analysis Worksheet)		
(1) Critical Control Point:		Task 1: Pre-survey inspection of equipment, vehicles, boat and trailer at Regional office
Significant Hazard(s):		Aquatic invertebrates and plants
Limits for Each Control Measure:		Size, visibility, detectability of nuisance organisms. Ability to completely dry equipment (length of time between surveys)
Monitoring	What:	Survey equipment, vehicles, trailers and boats
	How:	Visual inspection and manual removal of nuisance material, make sure equipment has dried sufficiently
	Frequency:	Prior to each survey event
	Who:	Regional fisheries staff
Evaluation & Corrective Action(s) (if needed):		Complete additional thorough cleaning as per Task 5 (steam-cleaning, etc.)
Supporting Documents (if any):		HACCP plan
>>>		
(2) Critical Control Point:		Task 5: Complete cleaning of equipment before deploying on a different body of water (either field approach, or full facility office approach)
Significant Hazard(s):		Aquatic invertebrates and plants
Limits for Each Control Measure:		Size, visibility, detectability of nuisance organisms. Ability to completely dry equipment (length of time between surveys)
Monitoring	What:	Survey equipment, vehicles, trailers and boats
	How:	Visual inspection and manual removal of nuisance material, make sure equipment has dried sufficiently. For facility approach, complete thorough steam-cleaning of boat, trailer, towing vehicle, survey equipment
	Frequency:	Prior to moving to different body of water
	Who:	Regional fisheries staff
Evaluation & Corrective Action(s) (if needed):		Complete thorough second cleaning as described above
Supporting Documents (if any):		HACCP plan
>>>		
(3) Critical Control Point:		
Significant Hazard(s):		
Limits for Each Control Measure:		
Monitoring	What:	
	How:	
	Frequency:	
	Who:	
Evaluation & Corrective Action(s) (if needed):		
Supporting Documents (if any):		
>>>		

Facility:	**Activity/Management Objective:**
Address:	
Signature: **HACCP Plan was followed.**	**Date:**