

Hazard Analysis and Critical Control Point (HACCP) Plan:

Inflatable Watercraft Fish Habitat Survey

for the



**Anadromous Fish Restoration Program
U.S. Fish & Wildlife Service**

HACCP Step 1 – Activity Description

Activity Description	
Facility: Stockton Fish and Wildlife Office (STFWO), Anadromous Fish Restoration Program	Site: California's Central Valley Rivers and Streams, under the purview of the Central Valley Project Improvement Act
Project Coordinator: Project Leader, STFWO	Activity/Management Objective: Utilize inflatable watercraft to navigate river reaches for reconnaissance investigations and touring for fish habitat restoration project planning, without spreading non-target organisms.
Site Manager: John Icanberry	
Address: 4001 N. Wilson Way Stockton, CA 95205	
Phone: (209) 946-6400	
Project Description	
<p>Who: AFRP staff and associated project partners.</p> <p>What: Field touring of fish habitat restoration sites.</p> <p>Where: All California Central Valley streams under purview of the CVPIA</p> <p>When: Variable: (more surveys in warm weather season, less in winter), up to weekly in summer, down to monthly in winter.</p> <p>How: Collect and load materials into trucks at AFRP office. Drive to site. Take out equipment, inflate and construct watercraft. Launch watercraft to designated point. Frequently shuttle vehicle downstream after driving to site.</p> <p>Why: To observe river and fish habitat conditions and investigate potential restoration sites.</p>	

HACCP Step 2 – Identify Potential Hazards

Hazards: Species or Contaminants Which May Potentially Be Moved/Introduced

Vertebrates

Amphibians: bullfrogs (*Rana catesbeiana*)

Reptiles: lizards (any), garter snakes (*Thamnophis sp.*), non-native snakes (*Nerodia sp.*)

Fish: All exotic and invasive fish species

Mammals: small rodents (any)

Invertebrates

Molluscs: New Zealand mudsnail (*Potamopyrgus antipodarum*), zebra mussel (*Dreissena polymorpha*), Asian clam (*Corbicula fluminea*), bubble snail (*Haminoea sp.*), others

Crustaceans: Siberian prawn (*Exopalaemon modestus*), mitten crabs (*Eriocheir sinensis*), green crabs (*Carcinus maenas*), other non-native shrimp, non-native crayfish (ex.

Procambarus clarkii, *Pacifastacus leniusculus*)

Hydroids: jellyfish (ex. *Craspedacusta sowerbii*), bryozoans (any)

Arthropods: insects (any), arachnids and other types of organisms

Plants

Aquatic: purple loosestrife (*Lythrum salicaria*), Brazilian waterweed (*Egeria densa*), water hyacinth (*Eichhornia crassipes*), Eurasian watermilfoil (*Myriophyllum spicatum*), Hydrilla (*Hydrilla verticillata*), Canadian waterweed (*Elodea canadensis*)

Terrestrial: broadleaved pepperweed (*Lepidium latifolium*), giant arundo (*Arundo donax*), yellow flag iris (*Iris pseudacorus*), scarlet wisteria (*Sesbania punicea*), Ludwigia (*Ludwigia hexapetala*), knapweeds/starthistles (*Centaurea sp.*), thistles (*Cirsium sp.*), puncturevine (*Tribulus terrestris*), other plants.

Others - Biologics

Disease: Whirling disease (*Myxobolus cerebralis*), red anus disease, enteric redmouth disease (*Yersinia ruckeri*, ERM), sudden oak death (*Phytophthora ramorum*), other fish diseases

Pathogens: Hepatitis A and B

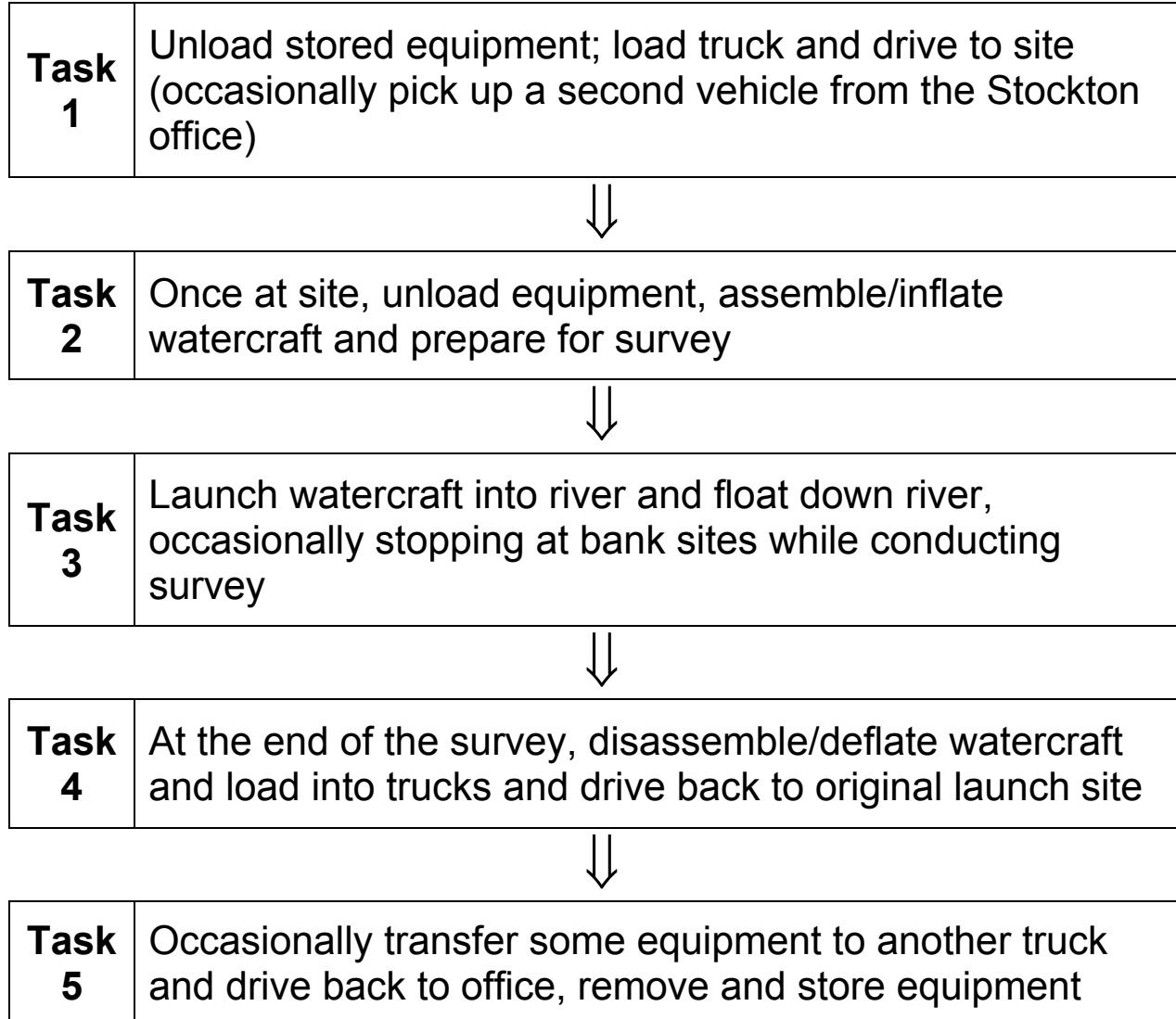
Parasites: [ex. anchor worm (*Lernea sp.*)]

Others

pesticide residues, oil, human waste

HACCP Step 3 – Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project



HACCP Step 4 - Hazard Analysis Worksheet

1 Tasks	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant?	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?
Task 1 Unload stored equipment; load truck and drive to site (occasionally pick up a second vehicle from the Stockton office)	Vertebrates rodents	no	Rodents are common throughout area		no
	Invertebrates spiders, ants	no	Common throughout area		no
	Plants weed seeds	no	Common throughout area		no
	Others Biologics none	n/a			no
	Others oil, automotive fluids, rodent excrement	yes	Could be a vehicle leak	Check for leaks before driving to site	yes

HACCP Step 4 - Hazard Analysis Worksheet

1 Tasks	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant?	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?
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Task 2 Once at site, unload equipment, assemble/inflate watercraft and prepare for survey	Vertebrates none	n/a			no
	Invertebrates insects, aquatic inverts., NZMS	no	Travel within system, downstream, not far (up to 10 miles)		no
	Plants weed seeds, aquatic plants	yes	Possible to pick up weed seeds and other plant materials	Check watercraft for plant materials, check clothing for seeds or materials and remove by hand	yes
	Others Biologics none	n/a			no
	Others none	n/a			no

HACCP Step 4 - Hazard Analysis Worksheet

1 Tasks	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant?	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?
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Task 3 Launch watercraft into river and float down river, occasionally stopping at bank sites while conducting survey	Vertebrates none				no
	Invertebrates insects, aquatic inverts., NZMS	no	Travel within system, downstream, not far (up to 10 miles)		no
	Plants weed seeds, aquatic plants	yes	Possible to pick up weed seeds and other plant materials	Check watercraft for plant materials, check clothing for seeds or materials and remove by hand	yes
	Others Biologics none	n/a			no
	Others none	n/a			no

HACCP Step 4 - Hazard Analysis Worksheet

1 Tasks	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant?	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?
Task 4 At the end of the survey, disassemble/deflate watercraft and load into trucks and drive back to original launch site	Vertebrates None	n/a			no
	Invertebrates New Zealand Mudsnail (NZMS)	no	Will not be returning to water at original site		no
	Plants weed seeds, water hyacinth, Egeria, etc.	yes	Possible to transport plant materials to original site	Visually inspect watercraft and personal equipment and remove propagules or materials	yes
	Others Biologics fish diseases	no	Any diseases are already present in system		no
	Others chemicals, human waste, etc.	no	Will not be returning to water at original site		no

HACCP Step 4 - Hazard Analysis Worksheet

1 Tasks	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant?	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?
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Task 5 Occasionally transfer some equipment to another truck and drive back to office, remove and store equipment	Vertebrates none	n/a			no
	Invertebrates insects, New Zealand mudsnail	yes	New Zealand mudsnails could stay alive on equipment	Brush off boots and personal equipment, freeze boots and personal equipment (48 hrs), ¹ hose down truck	yes
	Plants weed seeds, aquatic plant fragments	no	Already controlled in Task 4		no
	Others Biologics none	n/a			no
	Others chemicals, human waste	no	Could not have a large quantity of these others on equipment		no

¹ AFRP Lodi satellite office does not currently have a freezer in Lodi, but will either get one or use Stockton FWO freezer in the interim when watercraft are used in watershed know to have NZMS

