

AFWO Fall Chinook Salmon Spawner Escapement Survey 2020 HACCP

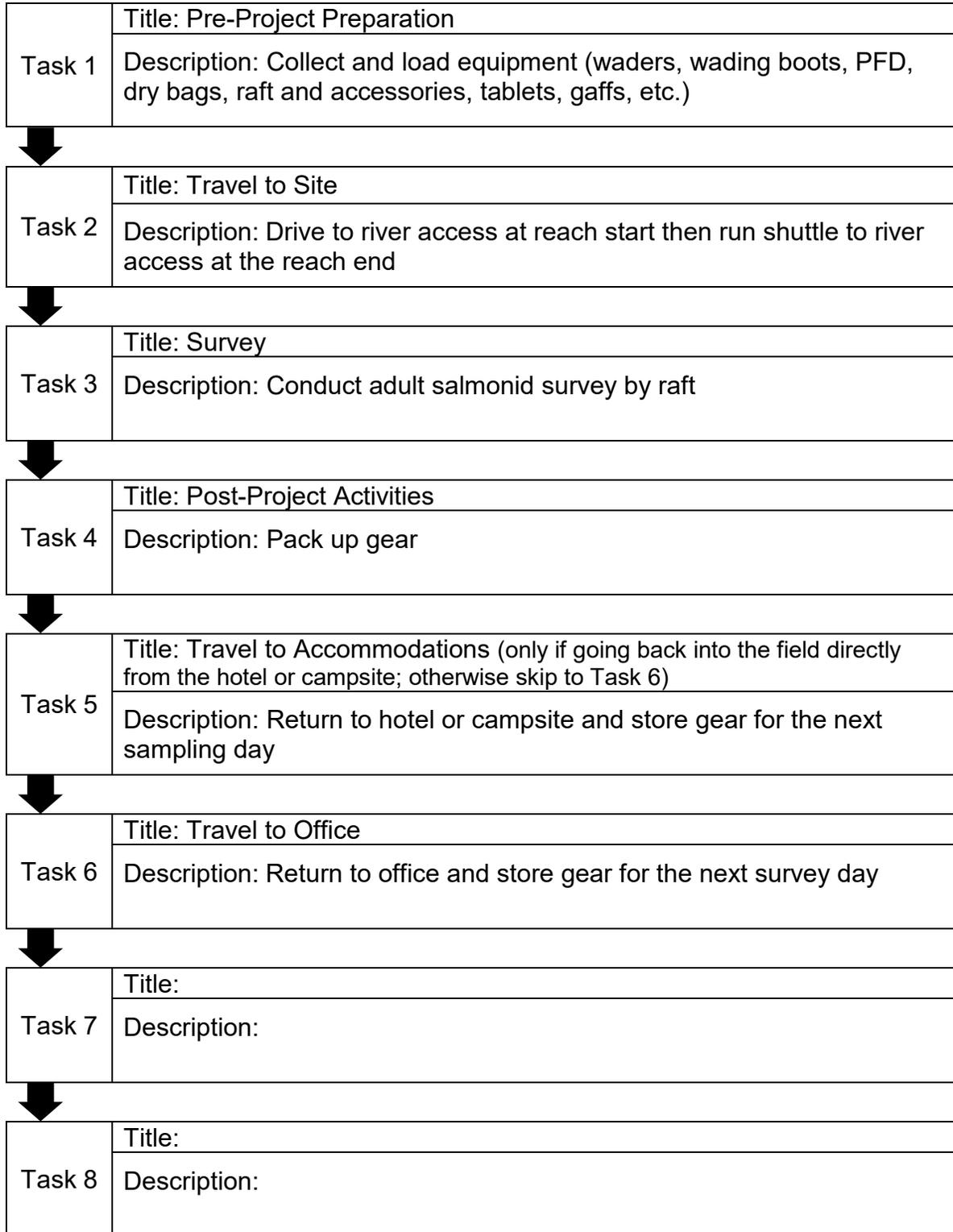
HACCP Step 1 – Activity Description

Management Objective & Contact Information	
HACCP Plan Title: Fall Chinook Salmon Spawner Escapement Survey	
Management Objective: Determine in-river run size (escapement) of Chinook Salmon in the mainstem Klamath and Trinity rivers.	Contact Person: Steve Gough Phone: (707) 825-5197 Email: steve_gough@fws.gov

Activity Description (i.e., Who; What; Where; When; How; Why)
<p>Who: USFWS, CDFW, Hoopa Valley Tribe, Karuk Tribe, USFS, Yurok Tribe.</p> <p>What: Fall Chinook Salmon spawner escapement surveys</p> <p>Where: Mainstem Klamath and Trinity rivers</p> <p>When: September–December</p> <p>How: The Cooperators will participate in surveys as directed by USFWS. Surveys will be conducted using USFWS’s established protocol and regulations for these ongoing inventories. Surveys will be conducted by raft. All located redds will be enumerated and mapped. All salmonid carcasses will be identified to species and sex, checked for adipose fin clips and recapture tags, and measured. Where carcass mark-recapture sampling occurs, all fresh carcasses will be marked with a numbered tag to allow recapture identification and enumeration on subsequent surveys. In addition to enumerating salmon redds and/or marking and sampling carcasses, survey crews will collect scale samples from recovered carcasses and retrieve snouts from adipose fin-clipped Chinook Salmon for later coded wire tag (CWT) extraction. All collected data will be recorded on tablets or USFWS survey data sheets.</p> <p>Why: This survey will determine in-river run size (escapement) of Chinook Salmon in the mainstem Klamath and Trinity rivers. Information will be collected on run timing, spawning distribution, length frequency, pre-spawn mortality rates, and sex ratios for fall Chinook Salmon. The survey provides CWT recovery information and age composition. Additionally, information on Coho Salmon and steelhead observed during the course of the survey will be documented.</p> <p>Information from this cooperative effort is used to track population trends and estimate the fall Chinook Salmon ocean stock abundance, age composition, and spawning run size, which are needed by the Pacific Fishery Management Council (PFMC), California Fish and Game Commission, and Tribes for harvest management. The information is used to determine if the PFMC Conservation Goal for Klamath River fall Chinook Salmon is met in a particular year and to develop projections of the fishable stock for the upcoming year. Once those projections are made, they are used by fishery management agencies to promulgate fishing regulations for the Chinook Salmon fishery along the northern California coast.</p>

HACCP Step 2 – Activity Flow Chart

Outline Sequential Tasks of Activity



HACCP Step 3 – Identify Potential Non-Targets

Non-Targets That May Potentially Be Moved/Introduced

Vertebrates:

Non-indigenous fish (<20 species), amphibian [e.g., Bull Frogs (*Rana catesbeiana*)], and reptile [e.g., Northern Water Snake (*Nerodia sipedon*), Red-Eared Slider Turtle (*Trachemys scripta*)] species.

Invertebrates:

New Zealand Mudsail (*Polamophyrgus antipodarum*), Zebra Mussel (*Dreissena polymorpha*), Quagga Mussels (*Dreissena bugensis*).

Plants:

Aquatic: Canadian Waterweed (*Elodea canadensis* and *nuttallii*), Curly Pondweed (*Potamogeton crispus*), Floating Primrose-Willow or Water Primrose (*Ludwigia* spp.), Lens-Podded White-Top (*Cardaria chalepensis*) and harmful algae.

Terrestrial: Yellow Starthistle (*Centaurea solstitialis*), Himalayan Blackberry (*Rubus discolor*), Tree-of-Heaven (*Ailanthus altissima*), Perennial Pepperweed (*Lepidium latifolium*), Yellow Flag Iris (*Iris pseudacorus*), Scotch Broom (*Cytisus scoparius*), Medusa-Head (*Taeniatherum caput-medusae*), Leafy Spurge (*Euphorbia esula*), Purple Loosestrife (*Lythrum salicaria*), Giant Arundo (*Arundo donax*), Salt Cedar or Tamarisk (*Tamarix* spp.), Italian Thistle (*Carduus pycnocephalus*), Canada Thistle (*Cirsium arvense*), Tansy Ragwort (*Senecio jacobaea*), Spotted Knapweed (*Centaurea maculosa*).

Other Organisms (pathogens, parasites, etc.):

Various fish diseases and parasites including but not limited to *Ceratomyxa shasta*, *Parvicapsula minibicornis*, *Nanophyetus salmincola*, bacterial kidney disease (*Renibacterium salmoninarum* metacercaria), Hematopoietic necrosis virus (IHNV), and *Flavobacterium columnare*.

HACCP Step 4 – Non-Target Analysis Worksheet

1	2	3	4	5	6	7
Tasks (From Step 2)	Potential Non-targets (From Step 3)	Risk Assessment Are any non-targets significant? Yes or No	Justification Justify your answer in Column 3	Control What control measures can be applied during this task to reduce the risk of non-targets?	CCP? Is this task a CCP? Yes or No	Justification Justify your answer in Column 6
Task 1 Title: Pre-Project Preparation	Vertebrates	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
	Invertebrates	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
	Plants	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
	Others	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
Task 2 Title: Travel to Site	Vertebrates	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
	Invertebrates	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
	Plants	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.
	Others	No	Non-targets are not present on equipment and gear.		No	Transport to other locations not possible.

Non-Target Analysis Worksheet (continued)

1	2	3	4	5	6	7
Tasks	Potential Non-targets	Risk Assessment	Justification	Control	CCP?	Justification
(From Step 2)	(From Step 3)	Are any non-targets significant? Yes or No	Justify your answer in Column 3	What control measures can be applied during this task to reduce the risk of non-targets?	Is this task a CCP? Yes or No	Justify your answer in Column 6

Task 3 Title: Survey	Vertebrates	No	Survey takes place in single location.		No	Transport to other locations not possible.
	Invertebrates	No	Survey takes place in single location.		No	Transport to other locations not possible.
	Plants	No	Survey takes place in single location.		No	Transport to other locations not possible.
	Others	No	Survey takes place in single location.		No	Transport to other locations not possible.

Task 4 Title: Post-Project Activities	Vertebrates	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment and gear.	No	Transport to other locations not possible.
	Invertebrates	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment and gear.	No	Transport to other locations not possible.
	Plants	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment and gear.	No	Transport to other locations not possible.
	Others	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment and gear.	No	Transport to other locations not possible.

Non-Target Analysis Worksheet (continued)

1	2	3	4	5	6	7
Tasks	Potential Non-targets	Risk Assessment	Justification	Control	CCP?	Justification
(From Step 2)	(From Step 3)	Are any non-targets significant? Yes or No	Justify your answer in Column 3	What control measures can be applied during this task to reduce the risk of non-targets?	Is this task a CCP? Yes or No	Justify your answer in Column 6
Task 5 Title: Travel to Accommodations	Vertebrates	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment and gear.	Yes	Transport of non-target vertebrates to other locations possible.
	Invertebrates	Yes	Equipment and gear may contain non-targets.	Freeze or apply Quat 128 to equipment and gear.	Yes	Transport of non-target invertebrates to other locations possible.
	Plants	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment, gear, and vehicle.	Yes	Transport of non-target plants and seeds to other locations possible.
	Others	Yes	Equipment and gear may contain non-targets.	Freeze or apply Quat 128 to equipment and gear.	Yes	Transport of non-target biologics to other locations possible.
Task 6 Title: Travel to Office	Vertebrates	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment and gear.	Yes	Transport of non-target vertebrates to other locations possible.
	Invertebrates	Yes	Equipment and gear may contain non-targets.	Freeze or apply Quat 128 to equipment and gear.	Yes	Transport of non-target invertebrates to other locations possible.
	Plants	Yes	Equipment and gear may contain non-targets.	Visual inspection and removal from equipment, gear, and vehicle.	Yes	Transport of non-target plants and seeds to other locations possible.
	Others	Yes	Equipment and gear may contain non-targets.	Freeze or apply Quat 128 to equipment and gear.	Yes	Transport of non-target biologics to other locations possible.

HACCP Step 5 – Non-Target Risk Action Plan (NTRAP)

(Use this form for any "Yes" from Column 6 of HACCP Step 4 - Non-Target Analysis Worksheet) One page for each Critical Control Point			
Management Objective From Step 1		Determine in-river run size (escapement) of Chinook Salmon in the mainstem Klamath and Trinity rivers.	
Critical Control Point:	5	Title:	Travel to Accommodations
Significant Non-Target(s) (Step 4, Column 3)		Vertebrates, invertebrates, plants, and other biologics as identified in Step 3.	
Control Measure(s) (Step 4, Column 5)		Visual Inspection: Visually inspect and remove non-target vertebrates, plants and seeds from vehicle and equipment. Freeze or Quat 128: Freeze equipment and gear or apply Quat 128.	
Prescribed ranges, limits, or criteria for control measure(s): (PRLC)		Visual Inspection: Non-targets are not present on vehicle, gear, and equipment. Freeze or apply Quat 128: Freeze for 24+ hours or expose affected area with 5% Quat 128 solution for 10+ minutes.	
Monitoring the Control Measure(s)		Who?	
		How?	
		Where?	
		How often?	
Corrective Action(s) if Control Measures Fail (or PRLC cannot be met)		Re-inspect and remove non-targets from vehicle and equipment. Re-freeze or re-apply Quat 128 to gear and equipment.	
Supporting Documents (For example, Management Plan, Checklist, Decontamination Techniques, SOPs, Scientific Journal Articles, etc.) AFWO Decontamination Protocol 6-17-13			
Development Team Members		Steve Gough, Vina Frye	
Date Developed:	July 24, 2018	Date(s) Reviewed:	May 12, 2020

** all gray fields are required*

HACCP Step 5 – Non-Target Risk Action Plan (NTRAP)

(Use this form for any "Yes" from Column 6 of HACCP Step 4 - Non-Target Analysis Worksheet) One page for each Critical Control Point			
Management Objective From Step 1		Determine in-river run size (escapement) of Chinook Salmon in the mainstem Klamath and Trinity rivers.	
Critical Control Point:	6	Title:	Travel to Office
Significant Non-Target(s) (Step 4, Column 3)		Vertebrates, invertebrates, plants, and other biologics as identified in Step 3.	
Control Measure(s) (Step 4, Column 5)		Visual Inspection: Visually inspect and remove non-target vertebrates, plants and seeds from vehicle and equipment. Freeze or Quat 128: Freeze equipment and gear or apply Quat 128.	
Prescribed ranges, limits, or criteria for control measure(s): (PRLC)		Visual Inspection: Non-targets are not present on vehicle, gear, and equipment. Freeze or apply Quat 128: Freeze for 24+ hours or expose affected area with 5% Quat 128 solution for 10+ minutes.	
Monitoring the Control Measure(s)		Who?	Field crew
		How?	Visual inspection and confirmation that viable non-targets are not present on vehicle, gear, and equipment. Confirm freeze or Quat 128 criteria limit is met.
		Where?	Prior to entering the highway (terrestrial plants and seeds on vehicle). At accommodations.
		How often?	Following each survey.
Corrective Action(s) if Control Measures Fail (or PRLC cannot be met)		Re-inspect and remove non-targets from vehicle and equipment. Re-freeze or re-apply Quat 128 to gear and equipment.	
Supporting Documents (For example, Management Plan, Checklist, Decontamination Techniques, SOPs, Scientific Journal Articles, etc.) AFWO Decontamination Protocol 6-17-13			
Development Team Members		Steve Gough, Vina Frye	
Date Developed:	July 24, 2018	Date(s) Reviewed:	May 12, 2020

* all gray fields are required