

Winter Chinook Carcass Survey HACCP Plan

HACCP Step 1 – Activity Description

| Activity Description | | |
|-----------------------------|--|---|
| Facility: | Red Bluff Fish and Wildlife Office/Anderson Field Office | Site: Coleman National Fish Hatchery, Anderson, CA |
| Project Coordinator: | Kevin Niemela | Activity: work conducted by the Hatchery Evaluation Team at the Hatchery |
| Site Manager: | James G. Smith | |
| Address: | 10950 Tyler Road Red Bluff, CA 96080 | |
| Phone: | 530-527-3043 | |

| Project Description i.e. Who; What; Where; When; How; Why |
|--|
| <p>The Hatchery Evaluation team at the Red Bluff Fish and Wildlife Office conducts a variety of fishery sampling and monitoring projects at the Coleman National Fish Hatchery and the Livingston Stone National Fish Hatchery, including, but not limited to “biosampling” during hatchery spawning operations, marking and tagging of juvenile fishes, collecting pre-liberation samples and data, and monitoring of adult fishes at the Coleman Barrier Weir. These activities involve working on the hatchery grounds throughout the entire year. A variety of vehicles can be used to transport people and gear onto the hatchery grounds, and a variety of equipment and sampling gear are used to conduct the work, depending on the particular task at hand. The primary risk associated with these activities centers around the unintended spread of invasive organisms into or throughout the hatchery. Once introduced into the hatchery, invasive organisms could spread throughout the hatchery, and would have direct access to the watersheds where the hatcheries are located, and the locations where hatchery fish are stocked. Because these projects share similar risks associated with spreading invasive organisms, they will be covered in this single, comprehensive HACCP plan.</p> |

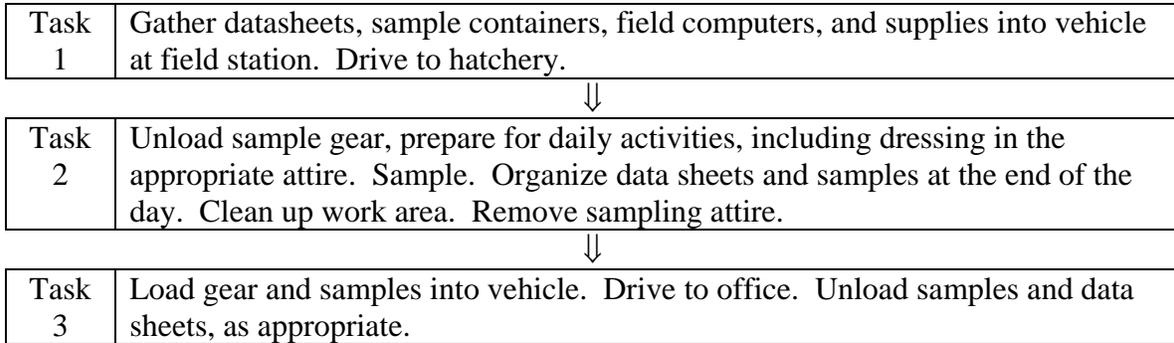
HACCP Step 2 – Identify Potential Hazards

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

| Hazards: Species Which May Potentially Be Moved/Introduced |
|---|
| Vertebrates: None. |
| Invertebrates: Aggressive invasive mollusks not yet identified at sites including but not limited to: New Zealand Mudsnailed (<i>Polamophyrus antipodarum</i>) and Zebra mussel (<i>Dreissena polymorpha</i>) and quagga mussels (<i>Dreissena bugensis</i>). Also, other invasive mollusks that may already be present at site including: Freshwater Asian clam (<i>Corbicula fluminea</i>). |
| Plants: Aggressive invasive terrestrial plant species not yet identified at sites including but not limited to: Giant Arundo (<i>Arundo donax</i>); Salt Cedar (<i>Tamarix spp.</i>); Purple loosestrife (<i>Lythrum salicaria</i>). Other invasive terrestrial plants that may be present at sites: Black locust; Broome Tree of Heaven Yellow star thistle and Pepperweed (<i>Lepidium latifolium</i>). Aggressive invasive aquatic plant species not yet identified at sites including but not limited to: Hydrilla (<i>Hydrilla verticillata</i>); Water Hyacinth (<i>Eichhornia crassipes</i>). Other invasive aquatics that may be present at sites including invasive <i>Ludwigia</i> species and Eurasian watermillfoil (<i>Myriophyllum spicatum</i>). |
| Other Biologics (e.g. disease, pathogen, parasite): Rosette agent, whirling disease, columnaris, and IHN. |
| Others (e.g. construction materials, etc.): None. |

HACCP Step 3 – Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project
Described in HACCP Step 1 – Activity Description



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 Gather datasheets, sample containers, field computers, and load supplies into vehicle at field station. Drive to hatchery. | <u>Vertebrates</u> None | No | It is unlikely that vertebrates could be unknowingly transferred onto hatchery grounds on a vehicle or in sampling gear.. | Maintain clean vehicles. Visually inspect motor vehicle and sampling gear before entering hatchery grounds. If vertebrates, debris or mud are found, clean and remove and dispose of properly before entering hatchery. Prefer to use gear dedicated specifically for the hatchery. In the event that gear must be brought in from other projects, disinfect gear according to hatchery protocols. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | No |
| | <u>Invertebrates</u> See Step 2: Invertebrates | Yes | Due to their ability to survive and small size, invertebrates could remain on vehicle or sampling gear from the previous survey due to inability to completely remove all. | Maintain clean vehicles. Visually inspect motor vehicle and sampling gear before entering hatchery grounds. If invertebrates, debris or mud are found, clean and remove and dispose of properly before entering hatchery. Prefer to use gear dedicated specifically for the hatchery. In the event that gear must be brought in from other projects, disinfect gear according to hatchery protocols. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | Yes |

| | | | | | |
|--|---|-----|---|---|-----|
| | <u>Plants</u> See Step 2: Plants | Yes | Plants could remain and survive on motor vehicle or sampling gear from the previous survey due to inability to completely remove all. | Maintain clean vehicles. Visually inspect motor vehicle and sampling gear before entering hatchery grounds. If plants, debris or mud are found, clean and remove and dispose of properly before entering hatchery. Prefer to use gear dedicated specifically for the hatchery. In the event that gear must be brought in from other projects, disinfect gear according to hatchery protocols. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | Yes |
| | <u>Others</u> See Step 2: Others and other Biologics | Yes | Pathogenic Organisms could remain on motor vehicle or sampling gear from previous survey and be transferred onto hatchery. | Maintain clean vehicles. Visually inspect motor vehicle and sampling gear before entering hatchery grounds. If plants, debris or mud are found, clean and remove and dispose of properly before entering hatchery. Prefer to use gear dedicated specifically for the hatchery. In the event that gear must be brought in from other projects, disinfect gear according to hatchery protocols. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | Yes |

| 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 2 Unload sample gear, prepare for daily activities, including dressing in the appropriate attire. Sample as per protocols. Organize data sheets and samples at the end of the day. Clean up work area and store sampling gear in designated areas. Remove sampling attire. | <u>Vertebrates</u> None | No | Possibility of inadvertently spreading pathogenic organisms around the hatchery by transferring fish around the facility. | Checked and cleaned vehicle and gear in previous task. Remove and properly dispose of any organisms, debris and mud observed. Avoid transferring fish or water between raceways, when possible. Avoid unnecessary movement between the spawning building and the following areas: raceways, egg incubation/early rearing building, and feed building. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | No |
| | <u>Invertebrates</u> See Step 2: Invertebrates | Yes | Possible that invertebrates may have survived on gear and were undetected and not removed in previous task. | Checked and cleaned vehicle and gear in previous task. Remove and properly dispose of any organisms, debris and mud observed. Avoid transferring fish or water between raceways, when possible. Avoid unnecessary movement between the spawning building and the following areas: raceways, egg incubation/early rearing building, and feed building. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | Yes |

| | | | | | |
|--|---|-----|--|---|-----|
| | <u>Plants</u> See Step 2: Plants | Yes | Possible that plants may have survived on gear and were undetected and not removed in previous task. | Checked and cleaned vehicle and gear in previous task. Remove and properly dispose of any organisms, debris and mud observed. Avoid transferring fish or water between raceways, when possible. Avoid unnecessary movement between the spawning building and the following areas: raceways, egg incubation/early rearing building, and feed building. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | Yes |
| | <u>Others</u> See Step 2: Others and other Biologics | Yes | There exists a possibility of inadvertently spreading pathogenic organisms around the hatchery by using contaminated equipment or by moving fish around the facility without authorization from the CNFH management. Leaking oil and motor fluids could contaminate raceways or creek. | Checked and cleaned vehicle and gear in previous task. Remove and properly dispose of any organisms, debris and mud observed. Avoid transferring fish or water between raceways, when possible. Avoid unnecessary movement between the spawning building and the following areas: raceways, egg incubation/early rearing building, and feed building. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms. | Yes |

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 Load gear and samples into vehicle. Drive to office. Unload samples and data sheets, as appropriate. | <u>Vertebrates</u> None | No | Not likely to unknowingly transfer vertebrates from the hatchery. | Visual inspection and removal of fishes from sampling gear (brushing, picking from gear). Disinfect equipment as appropriate. | Yes |
| | <u>Invertebrates</u> See Step 2: Invertebrates | No | Not likely to unknowingly transfer invertebrates from the hatchery. | Visual inspection and removal of invertebrates from sampling gear (brushing, picking from gear). Disinfect equipment as appropriate. | |
| | <u>Plants</u> See Step 2: Plants | No | Not likely to unknowingly transfer plants from the hatchery. | Visual inspection and removal of plants from gear (brushing, picking from gear). Disinfect equipment as appropriate. | |
| | <u>Others</u> See Step 2: Others and other Biologics | No | Not likely to unknowingly transfer pathogenic organisms from the hatchery. | Drain standing water. Rinse gear and remove visible debris. | |

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 | | |
| <p>Task 1 Gather datasheets, sample containers, field computers, and load supplies into vehicle at field station. Drive to hatchery.</p> | <p>Invertebrates, plants, or pathogenic organisms may have been left on vehicle or sampling gear from previous day.</p> | <p>Sampling gear brought onto hatchery is either new or disinfected, as per hatchery protocols. Vehicle is clean from visible debris, mud and organisms.</p> | <p>All sampling gear and vehicle.</p> | <p>Visually inspect vehicle. Remove debris, mud and organisms by brushing, picking, rinsing prior to entering hatchery grounds. Sampling gear is either dedicated specifically for use at the hatchery or, sampling gear brought onto hatchery is either new or disinfected, as per hatchery protocols.</p> | <p>Vehicle should be clean before entering the hatchery grounds. Used sampling gear should be disinfected, as per hatchery protocols, preferably before being brought onto hatchery grounds or, alternatively, immediately upon transfer onto hatchery grounds and before use.</p> | <p>Field sampling crew.</p> | <p>Determine that controls are in place and working. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms.</p> | <p>NA</p> |
| <p>Task 2 Unload sample gear, prepare for daily activities, including dressing in the appropriate attire. Sample as per protocols. Organize data sheets and samples at the end of the day. Clean up work area and store sampling gear in designated areas. Remove sampling attire.</p> | <p>Invertebrates, plants, or pathogenic organisms could be transferred onto the hatchery or from raceway to raceway through sampling activities.</p> | <p>Sampling gear is cleaned and disinfected, prior to use, as per guidance of hatchery management and the CA-NV Fish Health Center.</p> | <p>All sampling gear</p> | <p>Visually inspect gear. Remove organisms by brushing, picking, rinsing. Disinfect sampling gear as per guidance of hatchery management and CA-NV Fish Health Center.</p> | <p>As per guidance of hatchery management and CA-NV Fish Health Center.</p> | <p>Field sampling crew.</p> | <p>Determine that controls are in place and working. Inform hatchery management and seek guidance regarding all appreciable concerns and appropriate precautionary measures to avoid spreading invasive organisms.</p> | <p>NA</p> |

| | | | |
|---------------------------------|--------------|--|---|
| Facility: | | Red Bluff Fish and Wildlife Office/Anderson Field Office | |
| Address: | | 10950 Tyler Road Red Bluff, CA 96059 | Activity: Hatchery Evaluation monitoring activities at the Coleman and Livingston Stone National Fish Hatcheries |
| Signature: | Date: | | |
| HACCP Plan was followed. | | | |