

## HACCP Step 1 – Activity Description

<b>Activity Description</b>	
Facility: Bubbling Ponds Hatchery	Site:
Project Coordinator: Roger Sorensen	Activity/Management Objective:  Control of non-target species that may use various equipment as a pathway to hatchery
Site Manager: Frank Agyagos	
Address:	
Phone:	

<b>Project Description</b> i.e. Who; What; Where; When; How; Why
<p><b>Who:</b> <b>Bubbling Ponds Hatchery, Arizona Game and Fish Department.</b> Specific equipment is construction (rented or owned); distribution equipment (POD and other); Department visitors (Fish Health, water Quality, Hatchery Program Manager and fish culturist from other stations)</p> <p><b>What:</b> All agency personnel and associated equipment and materials may have potential to be a pathway for non-resident (hazardous) biological organisms. This is a plan to control the ingress/egress of these potential problems. Of particular interest will be fish transportation equipment that is not normally used for fish transfers.</p> <p><b>Where:</b> At originating facility. The non-targets that may originate at the facility can be considered as invasive.</p> <p><b>When:</b> Before POD equipment leaves the facility and before equipment enters the facility.</p> <p><b>How:</b> Inspect, clean, and potentially disinfect equipment as needed to ensure non target organisms do not enter or leave hatchery property.</p> <p><b>Why:</b> Reduce, eliminate, prevent introduction or export of hazards any time equipment is brought to hatchery from an area of potential hazards.</p>

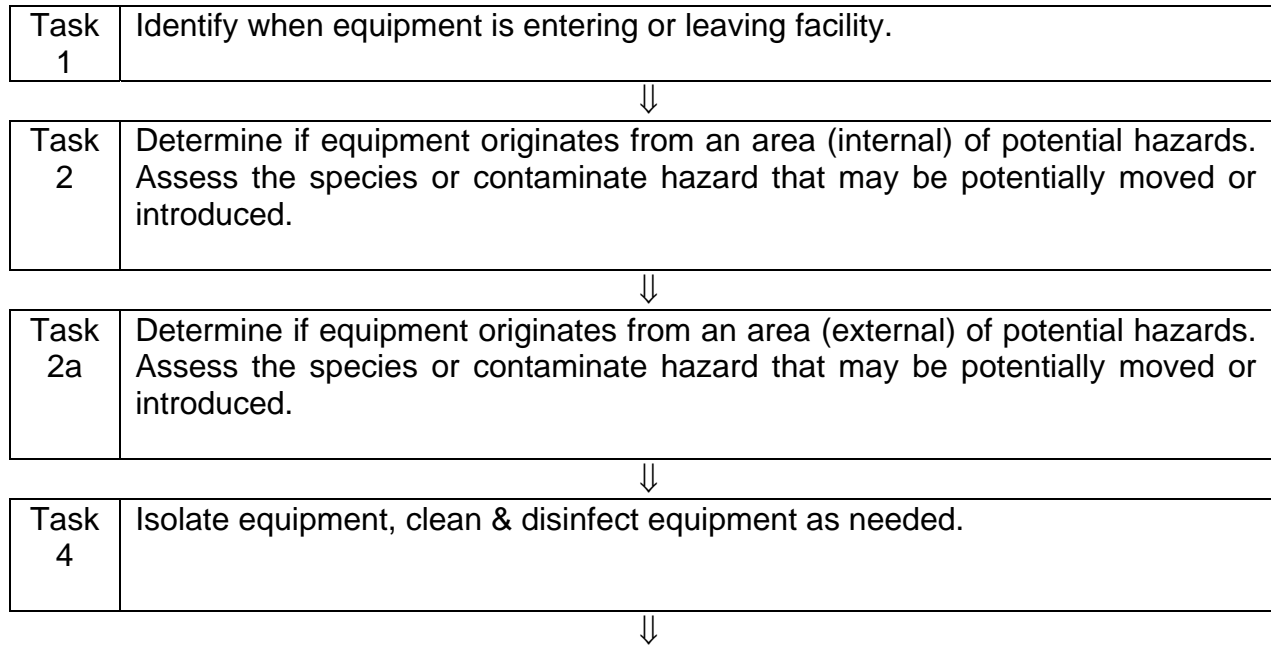
## HACCP Step 2 – Identify Potential Hazards

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

<b>Hazards: Species or Contaminants Which May Potentially Be Moved/Introduced</b>
Vertebrates: NA
Invertebrates: Crayfish, amphipods ( <i>Crangonyx gracilis</i> and <i>Hyaella azteca</i> ), caddiesflies ( <i>Protophila balmorhea</i> and <i>Metrichia volada</i> ), Aquatic snails: Page springsnails <i>Pyrgulopsis Morrisoni</i> , Chinese Mystery snail ( <i>Viviparus malleatus</i> ), and decollate snail ( <i>Physella virgata</i> and <i>Planorbella duiyi</i> ), and leech ( <i>Moiobdella suddenness</i> )
Plants: Terrestrial and aquatic: watercress ( <i>Nasturtium officinale</i> ), duckweed ( <i>Lemna minor</i> ), water parsnip ( <i>Berula erecta</i> ), water pennywort ( <i>Hydrocotyl venicillata</i> ), water speedwell ( <i>Veronica anagalli aquatica</i> ), dock ( <i>Rumex verticillatus</i> ), waterweed ( <i>Elodea occidentalis</i> ), pondweed ( <i>Potamogeton gramineus</i> ), cattails ( <i>Typha</i> spp.), bulrush ( <i>Scirpus</i> spp.), sedge ( <i>Carex</i> spp.) and algae ( <i>Rhizoclonium hieroglyphicum</i> and <i>Oscillaloria rubesens</i> )
Other Biologics (e.g. genetics, disease, pathogen, parasite, or non-pathogens):  Restricted fish pathogens (R12-4-410), Gyrodactylus, Trichodina, Asian tapeworm ( <i>Bothriocephalus opsarichthydis</i> ), and “Ich”.
Others (non-biological contaminants e.g. pesticide residue, oil products, etc. or harborage via packing or 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  
(to be transferred to column 1 of the HACCP Step 4 – Hazard Analysis Worksheet)



### 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 Identify when equipment is entering or leaving facility.	Vertebrates NA	No	They are not considered to be a significant threat.	All equipment entering the property are restricted to entry parking	No
	Invertebrates: Crayfish, amphipods ( <i>Crangonyx gracilis</i> and <i>Hyaella azteca</i> ), caddiesflies ( <i>Protophila balmorhea</i> and <i>Metrichia volada</i> ), Aquatic snails: Page springsnails <i>Pyrgulopsis Morrisoni</i> , Chinese Mystery snail ( <i>Viviparus malleatus</i> ), and decollate snail ( <i>Physella virgata</i> and <i>Planorbella duiyi</i> ), and leech ( <i>Moiobdella suddenness</i> )	No	Most are not considered to be a significant threat. Crayfish movement could be detrimental.	All equipment entering the property are restricted to entry parking until operator has discussed potential for being a pathway has been discussed and determined	No
	Plants: Terrestrial and aquatic: watercress ( <i>Nasturtium officinale</i> ), duckweed ( <i>Lemna minor</i> ), water parsnip ( <i>Berula erecta</i> ), water pennywort ( <i>Hydrocotyl venicillata</i> ), water speedwell ( <i>Veronica anagalli aquatica</i> ), dock ( <i>Rumex verticillatus</i> ), waterweed ( <i>Elodea occidentalis</i> ), pondweed ( <i>Potamogeton gramineus</i> ), cattails ( <i>Typha spp.</i> ), bulrush ( <i>Scirpus spp.</i> ), sedge ( <i>Carex spp.</i> and algae ( <i>Rhizoclonium hieroglyphicum</i> and <i>Oscillatoria rubesens</i> )	No	They are not considered to be a significant threat.	All equipment entering the property are restricted to entry parking until operator has discussed potential for being a pathway has been discussed and determined	No

	Other Biologics Restricted fish pathogens (R12-4-410) Restricted fish pathogens (R12-4-410), Gyrodactylus, Trichodina, Asian tapeworm ( <i>Bothriocephalus opsarichthydis</i> ), and "Ich". and those not present at the facility	No	There is an absence of restricted fish pathogens. Known pathogens in residence at the facility are not restricted.	NA	No
	Others None	NA	NA	NA	NA

Task 2 Determine if equipment originates from an area of potential (internal) hazards. Assess the species or contaminate hazard that may be potentially moved or introduced.	Vertebrates NA	NA	Pathway exists for non target species although remote to enter the facility. No pathway exists for non-targets to leave the property.	Communication with operator to determine potential for equipment being a pathway; visual inspection.	No
	Invertebrates: Crayfish, amphipods ( <i>Crangonyx gracilis</i> and <i>Hyaella azteca</i> ), caddiesflies ( <i>Protophila balmorhea</i> and <i>Metrichia volada</i> ), Aquatic snails: Page springsnails <i>Pyrgulopsis Morrisoni</i> , Chinese Mystery snail ( <i>Viviparus malleatus</i> ), and decollate snail ( <i>Physella virgata</i> and <i>Planorbella duiyi</i> ), and leech ( <i>Moiobdella suddenness</i> )	No	Pathway exists for non target species to leave the facility. Target species are cultured in ponds, loaded and transported to raceways in hatchery building, cleaned of no-targets and reloaded for distribution.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to leaving the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex.	No

	<p>Plants: Terrestrial and aquatic: watercress (<i>Nasturtium officinale</i>), duckweed (<i>Lemna minor</i>), water parsnip (<i>Berula erecta</i>), water pennywort (<i>Hydrocotyl venicillata</i>), water speedwell (<i>Veronica anagalli aquatica</i>), dock (<i>Rumex verticillatus</i>), waterweed (<i>Elodea occidentalis</i>), pondweed (<i>Potamogeton gramineus</i>), cattails (<i>Typha</i> spp.), bulrush (<i>Scirpus</i> spp.), sedge (<i>Carex</i> spp. and algae (<i>Rhizoclonium hieroglyphicum</i> and <i>Oscillatoria rubesens</i>)</p>	No	Pathway exists for non target species to leave the facility. Target species are cultures in ponds, loaded and transported to raceways in hatchery building, cleaned of no-targets and reloaded for distribution.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to leaving the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex.	No
	<p>Other Biologics Restricted fish pathogens (R12-4-410) Restricted fish pathogens (R12-4-410), Gyrodactylus, Trichodina, Asian tapeworm (<i>Bothriocephalus opsarichthydis</i>), and "Ich". and those not present at the facility</p>	No	There is an absence of restricted fish pathogens. Known pathogens in residence at the facility are not restricted.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to leaving the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex.	No
Others None		NA	NA	NA	NA

### 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)
<p>Task # 2a Determine if equipment originates from an area (external) of potential hazards. Assess the species or contaminate hazard that may be potentially moved or introduced. Isolate equipment, clean &amp; disinfect equipment as needed.</p>	<p>Vertebrates NA</p>	No	<p>Pathway exists for non target species although remote to enter the facility. No pathway exists for non- targets to leave the property.</p>	<p>This biological group does not impact production at facility and would not leave the station with fish distribution because of HACCP Plan for distribution</p>	No
	<p>Invertebrates: Crayfish, amphipods (<i>Crangonyx gracilis</i> and <i>Hyaella azteca</i>), caddiesflies (<i>Protophila balmorhea</i> and <i>Metrichia volada</i>), Aquatic snails: Page springsnails <i>Pyrgulopsis Morrisoni</i>, Chinese Mystery snail (<i>Viviparus malleatus</i>), and decollate snail (<i>Physella virgata</i> and <i>Planorbella duiyi</i>), and leech (<i>Moiobdella suddenness</i>)</p>	No	<p>Pathway exists for non target species to enter the facility.</p>	<p>This biological group does not impact production at facility and would not leave the station with fish distribution because of HACCP Plan for distribution</p>	No

	Plants: Terrestrial and aquatic: watercress ( <i>Nasturtium officinale</i> ), duckweed ( <i>Lemna minor</i> ), water parsnip ( <i>Berula erecta</i> ), water pennywort ( <i>Hydrocotyl venicillata</i> ), water speedwell ( <i>Veronica anagalli aquatica</i> ), dock ( <i>Rumex verticillatus</i> ), waterweed ( <i>Elodea occidentalis</i> ), pondweed ( <i>Potamogeton gramineus</i> ), cattails ( <i>Typha</i> spp.), bulrush ( <i>Scirpus</i> spp.), sedge ( <i>Carex</i> spp. and algae ( <i>Rhizoclonium hieroglyphicum</i> and <i>Oscillaloria rubesens</i> )	No	Pathway exists for non target species with public vehicles but control is limited and risk is not considered significant.	This biological group does not impact production at facility and would not leave the station with fish distribution because of HACCP Plan for distribution	No
	Other Biologics Restricted fish pathogens (R12-4-410) Restricted fish pathogens (R12-4-410), Gyrodactylus, Trichodina, Asian tapeworm ( <i>Bothriocephalus opsarichthydis</i> ), and "Ich". and those not present at the facility	Yes	Pathway exists for non target species from equipment that has been used form fish transportation or in aquatic habitats.	Equipment and materials imported from other production facilities may be pathway.	No
	Others None	NA	NA	NA	NA

Task # 3 Isolate equipment, clean & disinfect equipment as needed.	Vertebrates NA	No	This biological group does not impact production at facility. The probability of non-targets piggy backing on equipment is remote. There is a fish distribution HACCP Plan for distribution that addresses most equipment.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to entering the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex.	NA
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	<p>Invertebrates: Crayfish, amphipods (<i>Crangonyx gracilis</i> and <i>Hyaella azteca</i>), caddiesflies (<i>Protophila balmorhea</i> and <i>Metrichia volada</i>), Aquatic snails: Page springsnails <i>Pyrgulopsis Morrisoni</i>, Chinese Mystery snail (<i>Viviparus malleatus</i>), and decollate snail (<i>Physella virgata</i> and <i>Planorbella duiyi</i>), and leech (<i>Moiobdella suddenness</i>)</p>	Yes	This group could cause problems with production. There is a fish a HACCP Plan for distribution and fish import to address potential movement.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to entering the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex.	Yes
	<p>Plants: Terrestrial and aquatic: watercress (<i>Nasturtium officinale</i>), duckweed (<i>Lemna minor</i>), water parsnip (<i>Berula erecta</i>), water pennywort (<i>Hydrocotyl venicillata</i>), water speedwell (<i>Veronica anagalli aquatica</i>), dock (<i>Rumex verticillatus</i>), waterweed (<i>Elodea occidentalis</i>), pondweed (<i>Potamogeton gramineus</i>), cattails (<i>Typha</i> spp.), bulrush (<i>Scirpus</i> spp.), sedge (<i>Carex</i> spp. and algae (<i>Rhizoclonium hieroglyphicum</i> and <i>Oscillaloria rubesens</i>)</p>	Yes	The terrestrial group impact is not significant but the aquatic portion has the potential to impact production at facility and could enter facility with any vehicle. The facility is open to the public and even though their movement is restricted to certain areas controlling all items is not feasible.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to entering the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex.	Yes
	<p>Other Biologics Restricted fish pathogens (R12-4-410) Restricted fish pathogens (R12-4-410), Gyrodactylus, Trichodina, Asian tapeworm (<i>Bothriocephalus opsarichthydis</i>), and "Ich". and those not present at the facility</p>	Yes	Equipment and materials imported from other production facilities may be pathway.	Communicate with operator to determine potential for equipment being a pathway. Equipment is cleaned prior to entering the hatchery facility and all imported equipment is inspected at property entry prior to being allowed into complex. Importation of fish culture related materials is prohibited from other production facilities.	Yes

	Others		NA		
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