

South Florida FRO HACCP for CERP Site Visits

HACCP Step 1 – Activity Description

Activity Description	
Facility: South Florida Fisheries Resource Office	Site: All Habitats
Project Coordinator: John Galvez	Activity: Surveys of Everglades Restoration Sites
Site Manager: John Galvez	
Address: 1339 20th Street Vero Beach, FL 32960	
Phone: 772-562-3909 Ext. 314	

Project Description i.e. Who; What; Where; When; How; Why
<p>The South Florida Fisheries Resource Office (SFFRO) provides technical assistance in the implementation and monitoring of the Comprehensive Everglades Restoration Plan (CERP). This Plan provides a framework to restore the health of the Everglades ecosystem, while conserving the water resources of central and south Florida. Invasive species is one of the biggest threats to the restoration of the Everglades. In South Florida more than 120 exotic species has been documented, including birds, reptiles, invertebrates like apple snails, aquatic and terrestrial plants, and a number of fish species. One of SFFRO activities involves site visits to the different restoration projects that are part of CERP. The purpose of these visits is to inspect sites for their potential use for fisheries and other recreational activities, and to look at the extent of the restoration. The HACCP for SFFRO provides a guideline to minimize the distribution of invasive plants and animals from sites that are infected with exotic species.</p>

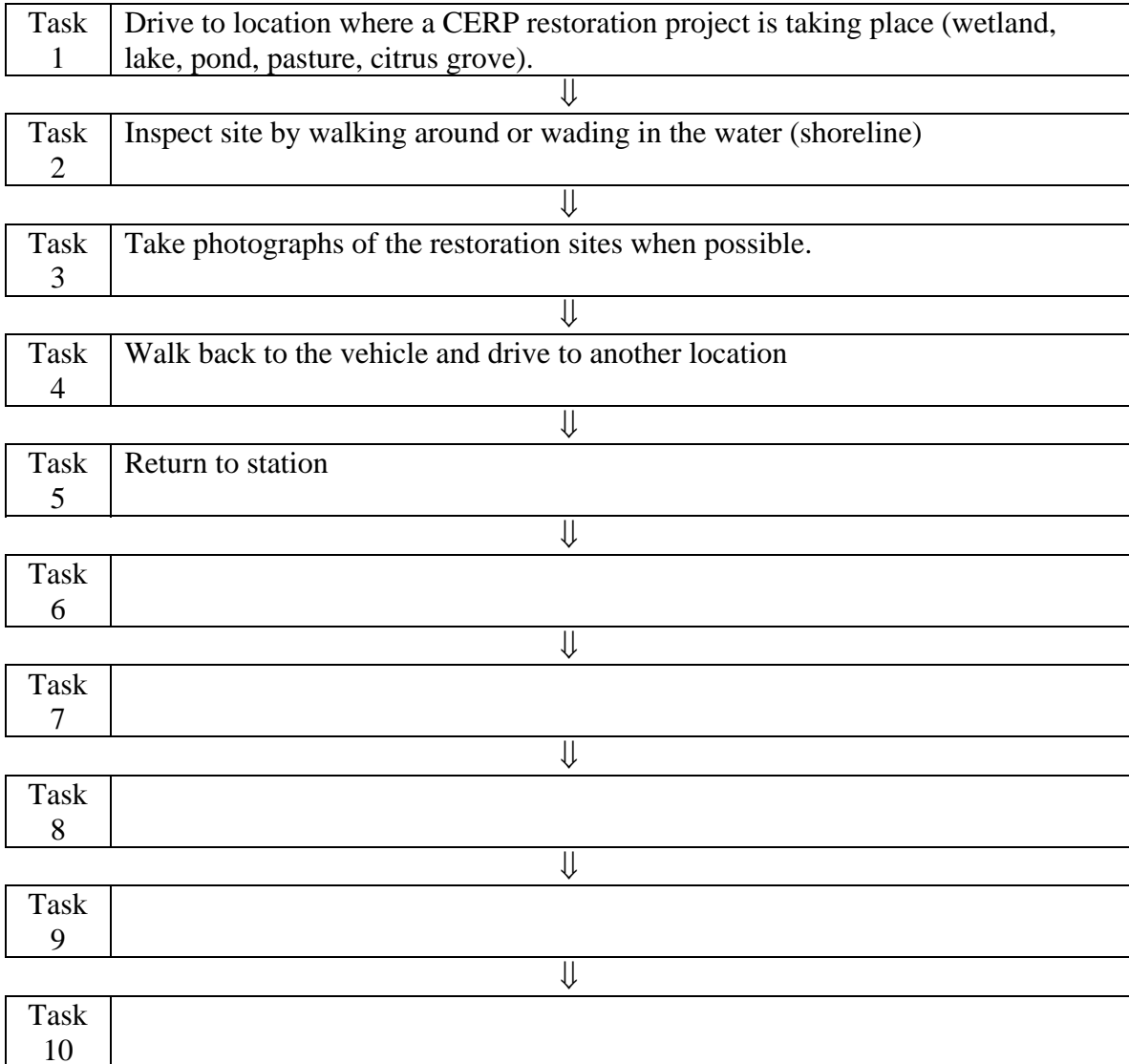
HACCP Step 2 – Identify Potential Hazards

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

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates:
Invertebrates: Asian clam (<i>Corbicula fluminea</i>), Spiketop applesnail (<i>Pomacea bridgesi</i>), Giant Rams-horn Snail (<i>Marisa cornuarietis</i>), Channeled Apple Snail (<i>Pomacea canaliculata</i>)
Plants: Brazilian Pepper (<i>Schinus terebinthifolius</i>), Melaleuca trees, (<i>Melaleuca quinquenervia</i>), Air potato (<i>Dioscorea bulbifera</i>), Old World climbing fern (<i>Lygodium microphyllum</i>), Camphor tree (<i>Cinnamomum camphora</i>), Japanese climbing fern (<i>Lygodium japonicum</i>), Eurasian water milfoil (<i>Myriophyllum spicatum</i>), Hydrilla (<i>Hydrilla verticillata</i>), Torpedograss (<i>Panicum repens</i>), Water hyacinth (<i>Eichhornia crassipes</i>), Wetland nightshade (<i>Solanum tampicense</i>), Australian Pine (<i>Casuarina equisetifolia</i>).
Other Biologics (e.g. disease, pathogen, parasite): Citrus Canker (<i>Xanthomonas axonopodis</i>)
Others (e.g. construction materials, etc.):

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)
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Task 1 Drive to location where a CERP restoration project is taking place (wetland, lake, pond, pasture, citrus grove).	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u>	No	There is little chance of spreading an invasive species from the station location to the place of a site visit.		
	<u>Plants</u>	No	There is little chance of spreading an invasive species from the station location to the place of a site visit.		
	<u>Others</u>	No			

Task 2 Inspect site by walking around	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u>	No	There is little chance of spreading an invasive species within the site being inspected		
	<u>Plants</u>	No	There is little chance of spreading an invasive species within the site being inspected		
	<u>Others</u>	No			

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Task 3 Take photographs of the restoration sites	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u>	No	There is no chance of spreading an invasive species by taking photographs of the sites.		
	<u>Plants</u>	No	There is no chance of spreading an invasive species by taking photographs of the sites.		
	<u>Others</u>	No			
Task 4 Walk back to the vehicle and drive to another location	<u>Vertebrates</u>	No			Yes
	<u>Invertebrates</u> Asian clam (<i>Corbicula fluminea</i>), Spiketop applesnail (<i>Pomacea bridgesi</i>), Giant Rams-horn Snail (<i>Marisa cornuarietis</i>), Channeled Apple Snail (<i>Pomacea canaliculata</i>)	Yes	It is possible to spread invasive species by taking eggs on waders or rubber boots, mud lodged on sampling equipment or on boots, or individuals that are part of samples from a site.	Inspect rubber boots and waders for eggs and avoid taking samples of individuals. Take photographs instead of live samples.	

	<u>Plants</u> Brazilian Pepper (Schinus terebinthifolius), Melaleuca trees, (Melaleuca quinquenervia), Air potato (Dioscorea bulbifera), Old World climbing fern (Lygodium microphyllum), Camphor tree (Cinnamomum camphora), Japanese climbing fern (Lygodium japonicum), Eurasian water milfoil (Myriophyllum spicatum), Hydrilla (Hydrilla verticillata), Torpedograss (Panicum repens), Water hyacinth (Eichhornia crassipes), Wetland nightshade (Solanum tampicense), Australian Pine Casuarina equisetifolia	Yes	There is a good chance of spreading an invasive species by taking eggs on clothing (pants, shirts, hats, etc), mud lodged on sampling equipment or on boots, or individuals that are part of samples from a site.	Inspect clothes and shoes for seeds or spores, and avoid taking samples of individuals. Take photographs instead of live samples when possible. Inspect vehicle for any plants that can be attached to the frame.	
	<u>Others</u> Citrus Canker (Xanthomonas axonopodis)	Yes		Avoid taking any citrus produce or material from the area.	

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Task 5 Return to station	<u>Vertebrates</u>	No			No
	<u>Invertebrates</u>	No	There is little chance of spreading an invasive species on the station (building)		
	<u>Plants</u>	No	There is little chance of spreading an invasive species on the station (building)		
	<u>Others</u>	No			

Task 6	<u>Vertebrates</u>				
	<u>Invertebrates</u>				
	<u>Plants</u>				
	<u>Others</u>				

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Task 7	<u>Vertebrates</u>				
	<u>Invertebrates</u>				
	<u>Plants</u>				
	<u>Others</u>				

Task 8	<u>Vertebrates</u>				
	<u>Invertebrates</u>				
	<u>Plants</u>				
	<u>Others</u>				

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Task 9	<u>Vertebrates</u>				
	<u>Invertebrates</u>				
	<u>Plants</u>				
	<u>Others</u>				

Task 10	<u>Vertebrates</u>				
	<u>Invertebrates</u>				
	<u>Plants</u>				
	<u>Others</u>				

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		
Task 4	Brazilian Pepper (Schinus terebinthifolius), Melaleuca trees, (Melaleuca quinquenervia), Air potato (Dioscorea bulbifera), Old World climbing fern (Lygodium microphyllum), Camphor tree (Cinnamomum camphora), Japanese climbing fern (Lygodium japonicum), Eurasian water milfoil (Myriophyllum spicatum), Hydrilla (Hydrilla verticillata), Torpedograss (Panicum repens), Water hyacinth (Eichhornia crassipes), Wetland nightshade (Solanum tampicense), Australian Pine Casuarina equisetifolia, Citrus Canker (Xanthomonas	Zero Tolerance	Presence of eggs, seeds or spores from exotic species	Visual Inspection	Before leaving each site being visited, and before going back to the station.	All the members of the team inspecting a site.	A final inspection of the boots, clothing, shoes, vehicle and equipment, and then thorough cleaning and drying before storing.	

	axonopodis), Asian clam (Corbicula fluminea), Spiketop applesnail (Pomacea bridgesi), Giant Ramshorn Snail (Marisa cornuarietis), Channeled Apple Snail (Pomacea canaliculata)							
Facility: South Florida Fisheries Resource Office						Activity: Surveys of Everglades Restoration Sites		
Address: 1339 20th Street Vero Beach, FL 32960								
Signature: /s/ John Galvez HACCP Plan was followed.						Date: December 15, 2005		