

HACCP (Hazard Analysis and Critical Control Point) Plan

Devils River minnow *Dionda diaboli*

Modified on 4-Feb-04

1. Product Description
2. Flow Diagram
3. Potential Hazards
4. Hazard Analysis Worksheet
5. HACCP Plan Form

1. Product Description

Firm Name:	San Marcos National Fish Hatchery and Technology Center
Firm Address:	500 East McCarty Lane San Marcos, Texas 78666
Species:	Devils River minnow (<i>Dionda diaboli</i>)
Cultured, wild-harvested, or both:	wild-harvested
Harvest method:	siene or dip net from spring-fed creeks
Method of storage:	flow-through units supplied with water directly from the Edward's Aquifer
Intended use and consumer:	refugium

2. Flow Diagram

Step 1	Devils River minnows are collected as needed from spring-fed creeks feeding the Devils River and the Rio Grande
Step 2	Devils River minnows are transported in coolers, filled with water from the collection site, to the isolation room of the Holding House at NFHTC. All water from this room drains into a septic field.
Step 3	Devils River minnows are placed in quarantine systems, are fed flaked food and brine shrimp purchased from catalogues, and are examined for ANS at least every 3 days.
Step 4	Minnows remain in the refugium systems located in the isolation room
Step 5	
Step 6	

3. Potential Aquatic Nuisance Species (ANS) Hazards

List aquatic species here that are found in hatchery water supply or local waters that could potentially hitchhike to receiving waters and cause ecological harm.

Vertebrates armored catfishes, mosquitofish, various aquarium-trade fishes, tadpoles
Invertebrates *Melanoides tuberculata* , *Thiara granifera* , crayfish, various parasites
Plants *Hydrilla* , *Hygrophila* , water hyacinth

4. Hazard Analysis Worksheet

(1) Harvest or Aquaculture Step	(2) Identify potential ANS hazards introduced or controlled		(3) Are any hazards significant?	(4) Justify your decisions for column 3	(5) What control measures can be applied to prevent the hazards?	(6) Is this step a critical control point?
Devils River minnows are collected as needed from spring-fed creeks feeding the Devils River and the Rio Grande	vertebrates	armored catfishes, mosquitofish, various aquarium-trade fishes, tadpoles	yes	ANS are present in the Comal River and Devils River	manually remove ANS from collection at site	yes
	invertebrates	Melanoides tuberculata, Thiara granifera, crayfish, various parasites	yes	ANS are present in the Comal River and Devils River	manually remove ANS from collection at site	yes
	plants	Hydrilla, Hygrophila, water hyacinth	yes	ANS are present in the Comal River	manually remove ANS from collection at site	yes
Devils River minnows are transported in coolers, filled with water from the collection site, to the isolation room of the Holding House at NFHTC. All water from this room drains into a septic field.	vertebrates	armored catfishes, mosquitofish, various aquarium-trade fishes, tadpoles	no	ANS not present	not needed	no
	invertebrates	Melanoides tuberculata, Thiara granifera, crayfish, various parasites	yes	ANS may be transferred from net into quarantine tank	frequent observation during quarantine and removal of ANS	yes
	plants	Hydrilla, Hygrophila, water hyacinth	yes	ANS may be transferred from net into quarantine tank	frequent observation during quarantine and removal of ANS	yes
Devils River minnows are placed in quarantine systems, are fed flaked food and brine shrimp purchased from catalogues, and are examined for ANS at least every 3 days.	vertebrates	armored catfishes, mosquitofish, various aquarium-trade fishes, tadpoles	no	ANS not present	ANS becomes more noticeable as develop and are removed during quarantine process	no
	invertebrates	Melanoides tuberculata, Thiara granifera, crayfish, various parasites	yes	ANS may be transferred from net into quarantine tank	ANS becomes more noticeable as develop and are removed during quarantine process	yes
	plants	Hydrilla, Hygrophila, water hyacinth	yes	ANS may be transferred from net into quarantine tank	ANS becomes more noticeable as develop and are removed during quarantine process	yes

4. Hazard Analysis Worksheet

(1) Harvest or Aquaculture Step	(2) Identify potential ANS hazards introduced or controlled		(3) Are any hazards significant ?	(4) Justify your decisions for column 3	(5) What control measures can be applied to prevent the hazards?	(6) Is this step a critical control point?
Minnows remain in the refugium systems located in the isolation room	vertebrates	armored catfishes, mosquitofish, various aquarium-trade fishes,	no	Control of ANS hazard completed	Not needed	no
	invertebrates	Melanoides tuberculata, Thiara granifera, crayfish, various parasites	no	Control of ANS hazard completed	Not needed	no
	plants	Hydrilla, Hygrophila, water hyacinth	no	Control of ANS hazard completed	Not needed	no
	vertebrates					
	invertebrates					
	plants					
	vertebrates					
	invertebrates					
	plants					

