Managing Pathway Risks
HACCP Planning

Bob Pitman
Aquatic Invasive Species Coordinator
Southwest Region - FWS

HACCP-NRM.org

Hazard Analysis & Critical Control Points (HACCP) Planning

- Developed by Pillsbury food to remove contamination
  - Hitchhiking species contaminate pathways
- Sea Grant adapted the process for aquaculture to remove ANS hitchhikers
- FWS further adapted HACCP as a planning tool to manage pathway risks

HACCP Planning to manage distinct pathways is straightforward

the 5-step HACCP

- Stp 1..Describe the activity or pathway
- Stp 2..Identify the Hazards
- Stp 3..Create a flow diagram
- Stp 4..Analyse the Hazards
- Stp 5..complete the HACCP Plan

HACCP Step 1 – Activity Description

Facility:

Project C

Site Man

Address:

Phone:

HACCP Step 2 – Identify Potential Hazards

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

Hazards:

Vertebrates:

Invertebrates:

Plants:

Other Biologics (e.g. dis

Others (e.g. constructio

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)

Task 1	
Task 2	
Task 3	
Task 4	
Task 5	
Task 6	
Task 7	
Task 8	
Task 9	
Task 10	

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	Vertebrates				
	Inv				
	Pl				
	Ot				
Task 2	Ve				
	In				
	Pl				
	Ot				

HACCP Step 5 – HACCP Plan Form

HACCP Plan Form
(all CCP's or "yes's" from column 6 of HACCP Step 4 – Hazard Analysis Worksheet)

Critical Control Point (CCP)	Significant Hazard(s)	Limits for each Control Measure	Monitoring: What	Monitoring: How	Monitoring: Frequency	Monitoring: Who	Evaluation & Corrective Action(s) (if needed)	Supporting Documentation (if any)

Facility:	**Activity:**
Address:	
Signature: HACCP Plan was followed.	**Date:**

HACCP planning has ...

- readily comparable BMP's for similar management actions
- documents the process for easy review and comparison
- Has a "sign here" line
- strategically guides planners to ask the right questions and formulate comprehensive preventative actions.

HACCP fits very well with Invasive Species Executive Order 13112, 1999

Sec. 2. *Federal Agency Duties*. (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law,

(2) …use relevant programs and authorities to: (i) prevent the introduction of invasive species; …


Natural resource work leads to many unique locations.... Pathways


“accidental” introductions
could have devastating impact

No Introduction is Accidental

19

29

The zebra mussel as an example of a hitchhiking HAZARD

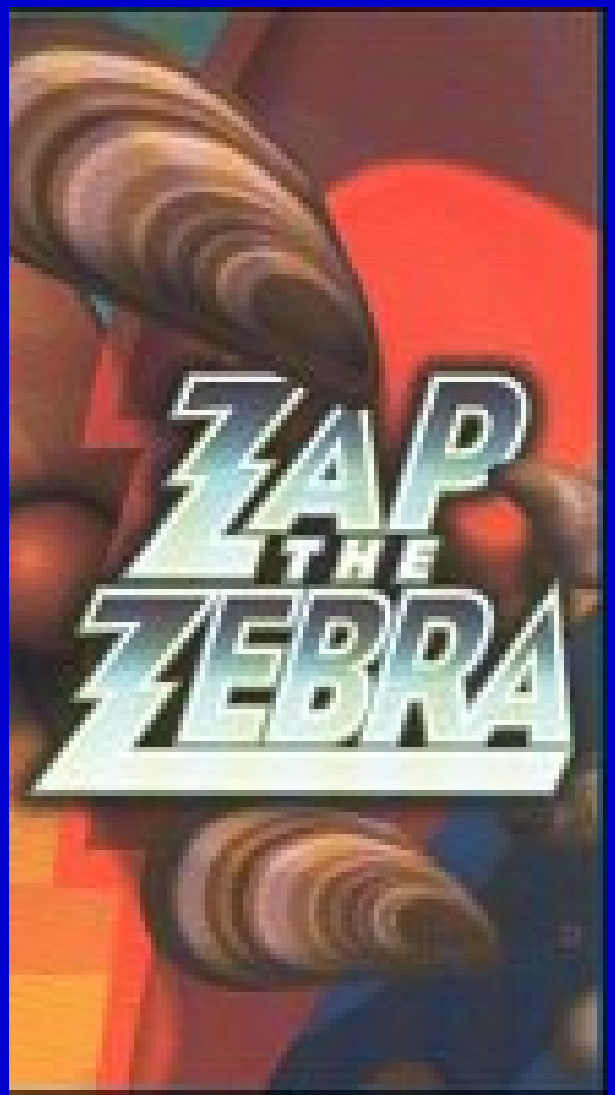
Spread quickly

The Pathway

- boats, barges and equipment

The 100th Meridian

Preventing spread across the 100th Meridian



Potamopyrgus antipodarum
New Zealand mudsnail

Aquatic surveys

Collections

Transfers

Rearing & Stocking species

Hydrilla


Hydrilla infestation
Withlacoochee River, Florida
Photo by Brian Nelson
Copyright 1997 Southwest Florida Water Management District

A common response received when this subject is discussed;

- “We don’t need this because we have already established protocols for our work.”

Some questions to consider;

- How were the protocols developed?
- Did you document the development process?
- How do you compare your protocols with others doing similar work?
- How are your protocols pier reviewed?

- Are follow-up procedures identified if any part of the protocol fails?
- Is there a documentation trail to show that protocols were followed?

HACCP planning is probably the best protocol developing engine available.

Support available

- HACCP planning workshops & training
- Dedicated website support

HACCP-NRM.org

HAZARD ANALYSIS & CRITICAL CONTROL POINT PLANNING

Planning is Everything!

Managing Natural Resource Pathways

HACCP
www.haccp-nrm.org

Translate this page: English to Spanish Translate Powered by Google

Managing Natural Resource Pathways
Planning Is Everything!

In natural resource work, equipment and organisms are often moved from one location to another. The specific equipment or organism being moved is called the target. Targets could include animals for relocation or stocking for recreation, equipment such as a bulldozers and backhoes, sampling gear such as nets or traps, and even people. Transporting targets provides a potential vector for the spread of non-target species that could potentially invade new habitat. Non-target species are the plants, animals, diseases, pathogens and parasites that are not intended to be moved. As Natural Resource Managers, it is essential that we do our best to remove these hazards from pathways.

Resource management work often creates open pathways that could spread invasive species to unique and critical habitats for already endangered species. Next to habitat loss, invasive species are resource management's biggest challenge. Executive Order 13112, 1998, directs agencies to prevent the spread of invasive species in their work but few management tools exist to implement this Directive. Hazard Analysis and Critical Control Points (HACCP) planning has been modified from the food industry for natural resource work. Around the world industry uses the HACCP planning tool to remove product contamination. In natural resource pathways, hitchhiking species are considered contaminants. HACCP's comprehensive planning identifies these species and the risk of contamination while documenting the best management practices used to prevent and remove hitchhikers.

HACCP planning focuses attention on critical control points where non-target species can be removed. Documenting risks and methods used to remove non target species gives managers a strategic method to make consistent decisions based on identified risks. Planning builds a logical framework of information to weigh risks for species spread against management benefits.

Why? A few errors can have long-lasting affects on agency mission! Additional planning support is available on this website where a planning manual, supporting documents, forms and a database of completed HACCP plans are available in several formats. Please share your best management practices and return completed plans for the database.

For more information contact...

Bob Pitman
Aquatic Invasive Species Coordinator
U.S. Fish & Wildlife Service, Region 2
(505) 248-6471
bob_pitman@fws.gov

Help us add to our database!
Click here to submit a HACCP plan.

Appropriate planning for species collections, relocations, equipment transfers and other natural resource work prevents spread of hitchhiking species through these pathways.

Pallid Sturgeon Release on the Yellowstone River in North Dakota. Photo Credit: U.S. Fish & Wildlife Service

Fish Stocking Truck at Jones Hole NFH, Utah. Photo by Pez. Robert Pfalmez Biologist, U.S. Fish & Wildlife Service

FWS Employee Releasing Turkey Vulture. Photo Credit: Hollingsworth, John and Karen, U. S. Fish & Wildlife Service

Prescribed Burn, Lower Klamath NWR, California. Photo Credit: Hollingsworth, John and Karen, U.S. Fish & Wildlife Service

- Home
- HACCP Plans
- HACCP Forms
- Documents
- Training & Workshops
- Review Team
- Links
- Contact Info

- Browse HACCP plans by State.
- List all Available HACCP Plans
- Browse HACCP plans by category NEW!

Search HACCP plans by keyword:

Submit Query

Number of HACCP Plans Available

STATE	# of HACCP PLANS
AK	3
AR	2
AZ	8
CA	1
GA	9
ID	1
ND	3
NM	14
NY	3
OK	5
TX	19
UT	1
VT	1
WA	5
WI	4
WY	3

Building a reference library of BMP's to remove non-targets from pathways.

Both ends of the pathway benefit

- At the shipping end
  - Proactively prevents unintended species movements
  - Protects agency and stations by documenting efforts to prevent spread

At the receiving end

- Risks and prevention BMP's can be reviewed and evaluated BEFORE delivery & release. High risk pathways can be blocked.

Resource Allocation

- HACCP planning is an excellent prioritization tool.
- Helps managers manage funding and justify decisions.

Background – why the Service got involved

- Inks Dam NFH stocked multiple species of “non-target” hitchhikers from central Texas into the Colorado River system
- HACCP planning was initiated to prevent future spread of non-targets (hitchhikers)

What's It Worth?

Fish and Wildlife Blunders in Lake Powell

By Skip Knowles, *The Salt Lake Tribune*, Tuesday, August 27, 2002

After years of telling Utah biologists to forget about stocking gizzard shad in Lake Powell because of concern for sensitive species, the U.S. Fish and Wildlife Service accidentally did just that.

"We considered it years ago and Fish and Wildlife said absolutely not," said southern region biologist Dale Hepworth. "Now they did it by mistake. That's kind of comical."

Gizzard shad, and as many as eight other species, were accidentally stocked several years ago in Morgan Lake near Shiprock, N.M., along with a load of largemouth bass intended for the lake

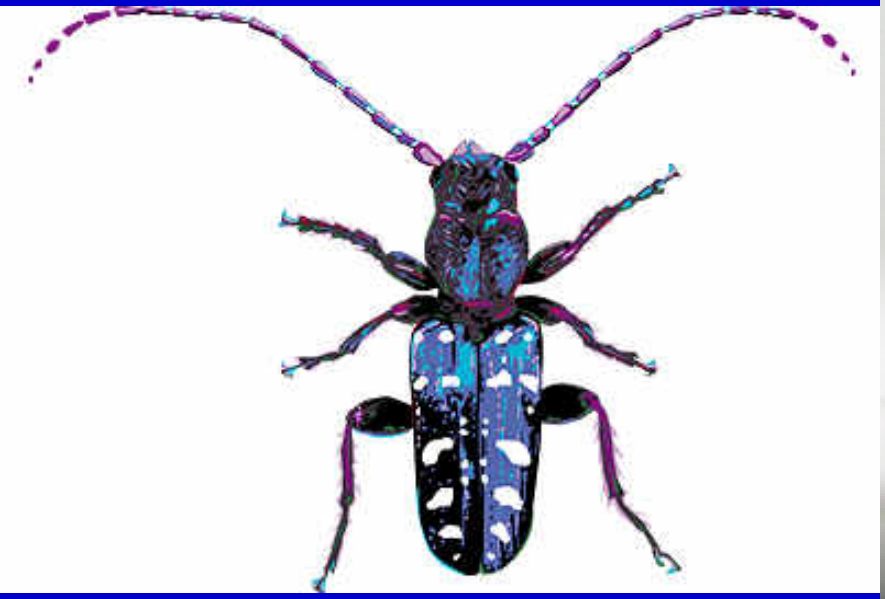
Gizzard Shad Found in Lake Powell

News Release

During routine fish sampling in August on Lake Powell's upper San Juan arm six gizzard shad were collected. This forage species is new to Lake Powell and the main-stem Colorado River drainage. Shad averaged 4 inches and were suspected to be naturally reproduced within the lake. Ramifications of a new species of fish range from good to bad.

Gizzard shad grow quickly and attain a much larger size than threadfin which, to this point, were the only shad in Lake Powell. The rapid growth means that largemouth and smallmouth bass are able to eat shad for only a short time each spring. Then shad and young bass may actually compete fro the

Asian longhorned beetle



Some hitchhikers to consider.

Wonder which pathways will spread these invaders?

A little planning could go a long way

Planning is Everything!

Managing Natural Resource Pathways

HACCP