

# HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP) PLANNING:

## 5-STEP APPROACH TO PREVENT UNINTENTIONAL INTRODUCTION OF NON-NATIVE INVASIVE SPECIES



[www.gayot.com](http://www.gayot.com)



[www.tydstroom.co.za/media/news/haccp-accredit](http://www.tydstroom.co.za/media/news/haccp-accredit)



[www.id.blm.gov](http://www.id.blm.gov)

### International Union of Forest Research Organizations- AIS in International Trade

May 26-30, 2008

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*United States Fish and Wildlife Services*  
*Invasive Species Specialist*  
Honolulu, Hawaii



# Outline

- What is HACCP
- Prevention through HACCP

HAZARD ANALYSIS & CRITICAL CONTROL POINT PLANNING FOR NATURAL RESOURCE MANAGEMENT

[WWW.HACCP-NRM.ORG](http://WWW.HACCP-NRM.ORG)

**Planning is Everything!**

*Managing Natural Resource Pathways*

**HACCP**

What is HACCP

# What is HACCP

- Hazard Analysis and Critical Control Point planning
- HACCP= science-based planning document
  - Pathway based management
  - Facilitated discussions identify prevention methods and actions to control non-targets from the process
  - Conceptual risk assessment and risk management to identify practical alternatives if needed



# Origin of HACCP

- "...a program for the astronauts focuses on preventing hazards that could cause food-borne illnesses by applying science-based controls, from raw material to finished products." U.S. FDA website

<http://www.cfsan.fda.gov/~lrd/bghaccp.html>



- The HACCP concept had its origin in the USA and stands for "Hazard Analysis Critical Control Point".
- 1958- Foundation of the NASA (National Aeronautics and Space Administration)
- 1959- Development of the HACCP concept to assure one hundred percent safety of food to be used in space.
- 1971- The HACCP system was published and documented in the USA.
- 1985- The National Academy of Science (NAS) recommended the use of the system. Worldwide the system became used and the FAO/WHO Codex Alimentarius (Food and Agriculture Organisation/World Health Organisation) cited the system in the Codex.
- 1993- The European regulation 93/43 EG from 14.7.93 provides the use of the system for the production of food.
- 1998- With coming into force on the August the 8th of 1998 the Hygiene Verordnung (German hygiene Rule) demands the use of the HACCP system in Germany.

Source: [http://www.ourfood.com/HACCP\\_ISO\\_9000.html#SECTION001600400000000](http://www.ourfood.com/HACCP_ISO_9000.html#SECTION001600400000000)

# HACCP as a Standard

- National Academy of Sciences
- FAO/ WHO Codex Alimentarius Commission
- National Advisory Committee on Microbiological Criteria for Foods
- 2008 it is being considered for incorporation into American Society for Testing and Materials (ASTM) International
- Pests in plant trade ?

# HACCP for NRM

- Sea Grant develops ANS-HACCP
- Train NR Agencies and bait industry (e.g., wild bait fish)
- USFWS modified HACCP



# Systematic Steps in HACCP Planning

(HACCP manual p. 3-1)

- Step 1 - Activity Description  
(who, what, when)
- Step 2 – Identify Potential Hazards  
(unintentional)
- Step 3 - Flow Diagram
- Step 4 - Hazard Analysis Worksheet  
(prevention and control points and methods)
- Step 5 - HACCP Plan Form



# Key HACCP Terms

(HACCP manual p. 6-1)

- Target
- Non-target
- Pathway
- Risk
- Control Point
- Critical Control Point



*Glossary, Chapter 6*

# Key HACCP Terminology

- Target - whatever is intentionally being moved from place to place
- Non-target - any species that may be present in the action area, but is not the species for which an action was initiated; aka hazards



# Key HACCP Terminology

- Pathway - an activity or process through which a species is transferred to a new location where it could become invasive
- Risk - an estimate of the likely occurrence of a hazard



# Review of HACCP Terms



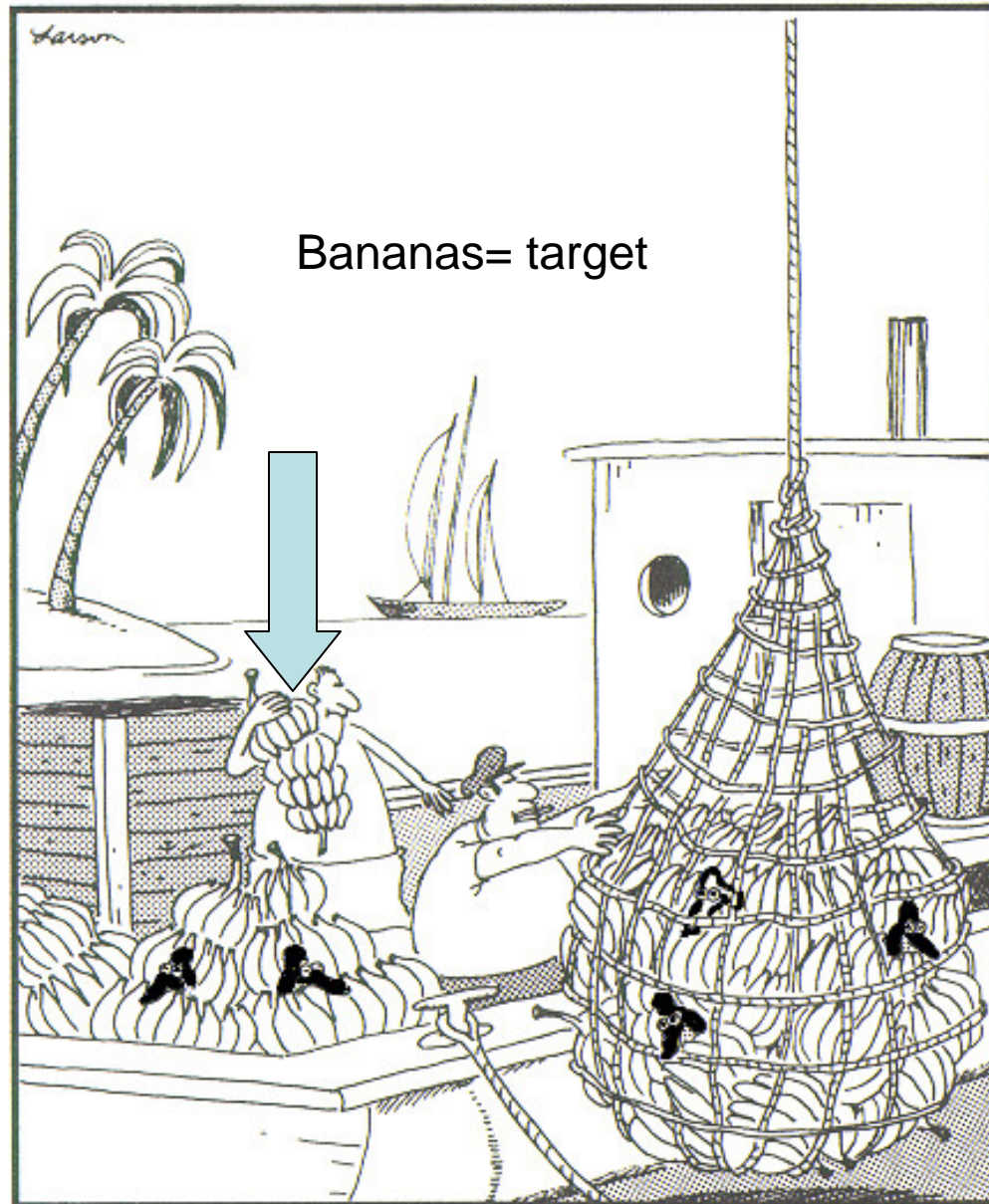
How Poodles Came to America

- Target
- Pathway
- Non-target
- Control Point
- Critical Control Point

# Review of HACCP Terms



How Poodles Came to America



Bananas = target

How Poodles Came to America



How Poodles Came to America



Poodles = non-target

How Poodles Came to America

# Key HACCP Terminology

- Control point - any step at which potential hazards can be controlled
- Critical control point (CCP) - the best point, step, or procedure at which significant hazards can be prevented or reduced to minimum risk

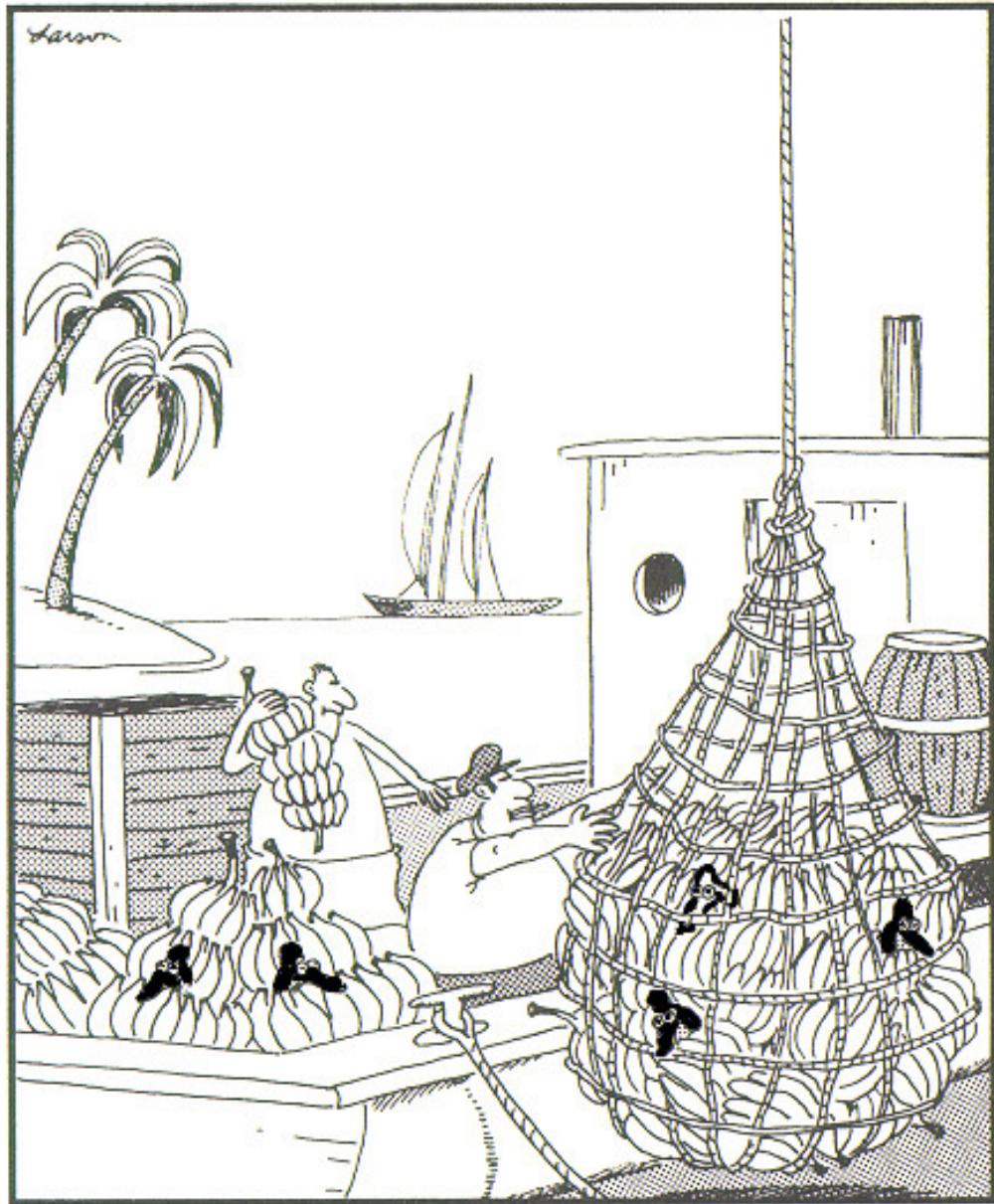


Control point ?

*Collecting bananas, loading bananas into cargo net, arranging bananas on boat, putting bananas into cargo net, lowering cargo net onto shore in America, unloading cargo net in America*

Critical control point ?

*Prior to net being loaded onto shore in America and poodles being released*



How Poodles Came to America

# HACCP WIZARD

<http://www.haccp-nrm.org/>

**HACCP Wizard**  
File Edit Help

**Hazard Analysis & Critical Control Point Planning Wizard**  
Managing Natural Resource Pathways

Step 1 | Step 2 | Step 3 | Step 4 | Step 5 |

Step 1 - Activity Description

This is the first step of a five-step process. Please provide contact information and identify the activity that the HACCP plan will cover. Please list the type of activity and then provide a concise yet complete description of this activity.

Facility (example: Hagerman National Wildlife Refuge)  
The University of Texas at Arlington

Site (example: Refuge Wide, All Habitats)  
Biology Department Aquatic Facility

Project Coordinator (example: Johnny Beall)  
Robert F. McMahon

Site Manager (example: Incident Commander in Charge of Fire Operations)  
David K. Britton

Phone (example: 903 786-2826)  
817 272-5577

Activity (example: Fire Management Operations)  
Zebra Mussel Research

Address (example: 6465 Refuge Road)  
UT Arlington, Box 19498

City, State and Zip Code (example: Sherman, TX 75090)  
Arlington, TX 76019

Activity Description: The project description should be a narrative description that includes such information as who, what, when, where, how, and why. The description should offer a historical, working reference to facilitate communication with the facility staff and other resource management agency personnel. (Please describe the project concisely and completely)

Reserch activities related to physiological tolerance experiments on Dreissena polymorpha (zebra mussels). Lab workers under the supervision of Robert McMahon participate in activities including holding mussels in tanks, water changes, tank cleanings, experimentation in smaller aquaria, and disposal of experimental animals. The lab is located in the basement of the Life Science Building at the University of Texas at Arlington. This research is performed to better understand the physiological limits of zebra mussels, which will help identify where this invasive species may spread in North America.

When you have entered the above information, you may move on to the next step. **Next Step** →

Step 1: Describe the project or activity. 2/16/2005 11:46 AM



Image from [www.allposters.com](http://www.allposters.com)

## Mokelumne River Fish Hatchery

Hazard Analysis Critical Control Point (HACCP) Plan  
for Release of Chinook Salmon and Steelhead Near  
Thornton on the Mokelumne River

February 15, 2006



# Hazard Analysis Critical Control Point Planning for Juvenile Mitten Crab Monitoring in the Sacramento - San Joaquin Rivers Delta

U.S. Fish and Wildlife Service  
Stockton Fish and Wildlife Office

Last Revised December, 2005



Prevention through HACCP



[www.ctahr.hawaii.edu/watershed/image/katie.jpg](http://www.ctahr.hawaii.edu/watershed/image/katie.jpg)



<http://www.delta.dfg.ca.gov/afrp/index.asp>



Ken A. Langeland, University of Florida, [www.forestryimages.org](http://www.forestryimages.org)

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# Conclusions:

- Pathway based (aquatic and terrestrial)
- Prevention and Control
- Agencies and Partners
- Proven history in other industries

<http://www.haccp-nrm.org/>



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www.forestryimages.org

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