

Preventing Invasions through Planning – HACCP for Natural Resource Pathways

Aquatic and terrestrial species of plants and animals move through human assisted pathways to become established outside their native range. Some of these non-natives will become invasive species challenges for management agencies requiring their attention and your dollars. Invasive species expand through their new habitats pushing natives aside and threatening already imperiled species with extinction while management struggles to control the invasion instead of managing resources. Often, the invasive species has moved undetected through a human assisted pathway as a hitchhiker. Not a planned introduction but an accident? No, not really, just a lack of planning which identifies pathway risks and establishes prevention strategies. Many unintended introductions but could be prevented by using a planning concept from industry. Hazard Analysis and Critical Control Points (HACCP) planning strategically identifies and removes contaminants during food production by concentrating actions at specific points in the process.

Removing hitchhiking species from human assisted pathways through planning is similar to removing contamination in food production. Pillsbury Foods developed the HACCP systematic planning procedure as a way to remove and prevent contamination when providing food for the NASA moon missions in the 60's. Since then, HACCP has become well known and used around the world as a comprehensive planning tool to prevent and remove hazards or in our case, hitchhiking species of plants and animals that all too often become invasive. HACCP planning has flexibility. It has been modified and adapted by the Fish & Wildlife Service as a strategic planning tool to remove hitchhikers from natural resource management pathways by focusing attention at pathway junctions where prevention is most effective.

HACCP for natural resource management (HACCP-NRM) is a straightforward pathway management concept modeled after Sea Grant University's "ANS-HACCP", which is used for private aquaculture and baitfish pathways. HACCP planning for resource management strategically guides planners to identify hitchhiking species and critical control points (CCP) where hitchhikers can best be removed. Procedures necessary to remove contaminating species from risky pathways are spelled out for each CCP. When finished, the five-step HACCP process yields a straightforward check-list of best management practices (BMPs) to guide field work. While BMPs are familiar to everyone they often don't get shared on a wide basis. HACCP planning for natural resource pathways (HACCP-NRM) creates a common language of collected BMPs easily shared across the country and around the world for that matter.

HACCP planning is easy to do but a short training session is recommended to prevent frustrations and help to make plans valuable management tools. The Fish & Wildlife Service's National Conservation Training Center is developing training to teach HACCP planning principles to biologists, technicians and managers for terrestrial and aquatic natural resource pathways. Future trainings, workshops, blank forms, training guides and additional HACCP planning support are web-based at (www.HACCP-NRM.org).

Although resource managers and biological professionals are a small part of the invasive species problem they could play a big role solving the problem. The constant flow of hitchhiking species, coming and going, could be reduced through a little pathway planning. The pathway management concept for natural resources could spill-over to other pathways further reducing the flow of invasive species. A little planning here and there soon adds-up to a big difference. Executive Order 13112, 1998, directs federal agencies to prevent the spread of invasive species in their work. HACCP planning for natural resource pathways is a perfect fit.

Asian carp species (bighead, silver and black carp) invaded the Mississippi River basin in the 80's early 90's. Their numbers have exploded at the expense of other species. These invaders threaten to spread to new waters. Fortunately, none of these invaders can drive! The only way they can expand is through a human assisted pathway, such as fish transfers. Even trained fishery biologists have made mistakes separating Asian carp from local fish species. It is very likely that Asian carp will be spread as hitchhikers in fish shipments from resource agencies, private aquaculture or recreational users. HACCP planning for these pathways could prevent their spread. A little planning could save big bucks and protect resources.