

Increasing the utilization and value of fishery resources

Problem statement

New processing technologies are needed to improve the utilization and value of declining marine fish stocks and reduce the disposal of fish-processing wastes into the environment. When shellfish become contaminated with microbes from natural sources, shellfish growers suffer as a result of regulatory closures and loss of consumer confidence.

Critical factors

- Processing practices determine how efficiently a resource is converted into products and how much waste is discharged into the environment.
- Fish meal produced from fish-processing waste usually has low value because of its high bone content.
- Some bacteria accumulate in shellfish tissues and threaten human health. For example, *Vibrio vulnificus*, which occurs naturally in estuaries, can cause severe illness and death.
- Other species of *Vibrio* bacteria found in shellfish (e.g., *V. parahaemolyticus*) cause gastrointestinal illnesses in humans.
- Outbreaks of *V. vulnificus* have caused loss of consumer confidence, restrictions on shellfish harvest, and economic losses to the shellfish industry.



Status of research

Researchers at the Northwest Fisheries Science Center (NWFSC) are approaching fuller utilization of marine resources on two fronts. First, they are developing methods which recover more flesh from targeted fish species. Most recently, they have developed a new method for producing surimi for human consumption from fillet trimmings of cod, pollack and underutilized species such as arrowtooth flounder. This process is more efficient and cost-effective than the traditional way of making surimi, although it has not yet proven its ability to produce surimi of equal quality. Second, NWFSC scientists are working to identify and control naturally-occurring microbial pathogens that are present in shellfish and limit harvest. Blocking the ability of these bacteria to adhere to oyster tissue is one approach being taken to reduce their presence in shellfish.

Future considerations

NWFSC researchers will continue to develop new methods of production that increase the value of fish species which are not heavily exploited. At the same time, they will strive to significantly reduce processing wastes and control seafood-borne pathogens. Reducing wastes should improve the coastal environment, decrease costs of waste disposal, and help create healthier coastal economies. New microbiological methods of controlling seafood-borne pathogens will decrease risks to human health and welfare, improve consumer confidence, and benefit coastal communities that are economically dependent on this important industry.

Key Players

Resource Enhancement & Utilization Technologies (REUT) Division , NWFSC
University of Alaska
University of Washington
Oregon State University
University of California, Davis
Alaska Fisheries Development Foundation
Alaska Seafood Marketing Association
Interstate Shellfish Sanitation Conference
PacRim Shellfish Sanitation Conference

Contact: Dr. Robert Iwamoto, Director, REUT Division (206/860-3380)

