FISH TAILS NEWSLETTER

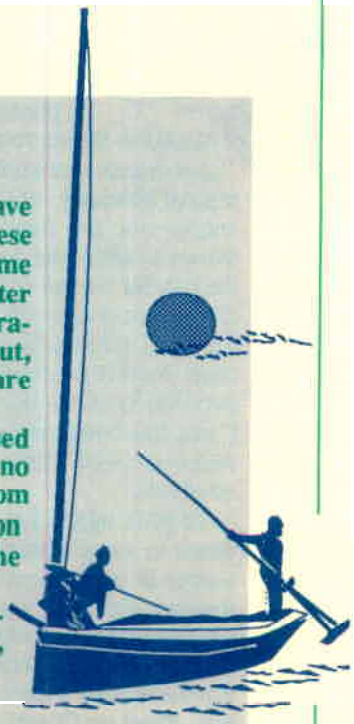
SPECIAL EDITION ON SEAFOOD SAFETY
(VOL 1.1)

CONFUSED ABOUT SEAFOOD SAFETY ?

New Jersey has a rich maritime history. Fishermen from Belford to Cape May have harvested the bountiful resources of the coast for over three hundred years. These fishermen harvest a variety of species from offshore and inshore waters. Some vessels may travel up to several hundred miles out to sea to catch deepwater species such as tuna, swordfish, cod and tilefish. Other vessels follow migratory fish up and down the coast. A variety of seafoods such as sea trout, flounder, squid, whiting, porgies, butterfish, sea bass, crabs and lobsters are landed at area ports.

The occasional wash-up of floatable garbage and medical supplies on our beaches has caused some people to become concerned about enjoying their favorite seafoods, but there is no evidence to indicate that these incidents have affected the safety and quality of seafoods from New Jersey waters. The New Jersey Departments of Health and Environmental Protection are actively involved in inspection, monitoring and testing programs to help ensure the wholesomeness and safety of seafood products.

In order to eliminate much of the confusion and concern about seafood products marketed in New Jersey, the New Jersey Departments of Agriculture, Environmental Protection, and Health have developed this newsletter to answer consumer questions.



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SHOULD I EAT SEAFOOD?

Seafood may not make you smarter, but it certainly is smart eating, both to stay healthy and to stay in shape. Fish and shellfish are excellent sources of high quality complete protein, many valuable minerals such as iron and zinc, and essential B complex, A and D vitamins. In other nutritional areas, seafoods score low--and that's good! An average (4 ounce) serving of seafood has less than 200 calories. Some of the leaner varieties, such as flounder, have as few as 80. Both freshwater and saltwater fish are low enough in sodium to be acceptable for low sodium diets. Fish are generally low in total fat, saturated fats and cholesterol. Increased seafood consumption is recognized by the American Heart Association and others as a significant element in reducing the risk of coronary heart disease. Many nutritional experts recommend several fish meals per week to maintain a healthy heart.

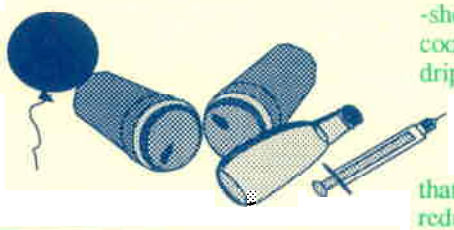
A factor that tends to minimize potential risks for people who consume seafood is that they are likely to eat a variety of fish from many different locations. Most dietary experts agree that excessive consumption of any single food, no matter how healthful or nutritious, should be avoided. As with many food products, each consumer must weigh the benefits of consumption against any potential risks that have been associated with specific species of seafood.

This newsletter is designed to help answer your questions.

WHAT ABOUT FLOATABLES AND MEDICAL WASTES?

Although floatables are unsightly and plastics can be detrimental to the survival of fish, turtles, and marine mammals by causing intestinal blockage, neither the medical wastes nor the floatables have been shown to affect the quality or safety of the fish for human consumption. Actually, water quality off the Jersey coast has been improving over the past decade. Weekly monitoring for bacteria at over 300 locations along the New Jersey Coast has consistently shown that the waters are well within state and federal standards.

Experts agree that there is no evidence to suggest that fish and medical wastes in our marine environment can transmit the HIV virus (AIDS). According to the State of the Ocean Report issued by the New Jersey Department of Environmental Protection's Blue Ribbon Panel on Ocean Incidents: *"For a fragile organism like HIV, there is virtually no possibility that it would survive in a syringe floating in salt water and exposed to sunlight...."*



WHAT ABOUT PCB'S, PESTICIDES AND OTHER TOXIC CHEMICALS?

Research and monitoring done over the past fifteen years has shown that some species of finfish can accumulate contaminants in their tissues. Fatty species, and fatty parts of the fish, including their internal organs, are most susceptible to accumulating high levels of these contaminants.

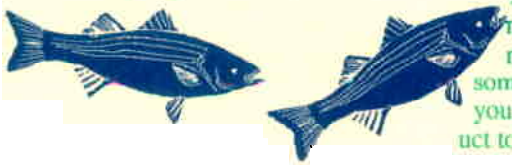
Based on state monitoring and research studies and information from the U.S. Food and Drug Administration and other federal agencies, the New Jersey Departments of Health and Environmental Protection issue advisories from time to time that recommend that people limit their consumption of particular species from specific areas. These advisories are primarily aimed at high risk individuals (e.g. pregnant women) and people who eat a large amount of a particular species from specific areas (such as recreational fishermen and their families). Recreational catches of one or two species from a single area might make up a large portion of the fish consumed by these groups over an entire year, and a significant portion of their overall diet.

The average consumer eats a wide variety of fish species harvested from many different areas. In fact, over 600 species of finfish and shellfish are commercially available. The vast majority of these species do not fall under any consumption advisory. These advisories apply only to a few species caught in certain specified areas.

If you are concerned about contaminants such as PCBs in fatty fish or in crustaceans, there are a number of steps that you can take to greatly reduce any potential intake of these chemicals. Since contaminants accumulate slowly over a long period of time, select smaller fish, e.g. bluefish under six pounds. In fatty finfish, any contaminants that might be present tend to accumulate in the fatty tissues; these areas--the belly flaps, dark meat along the lateral line, and the skin--should be removed before cooking. Use cooking techniques that allow fats to drip away from the fish, such as grilling, broiling or baking on a rack. Avoid coatings that hold in fats and oils. Recent studies on bluefish indicate that any PCBs that may be present can be reduced as much as 50% by using these preparation and cooking techniques. For crabs and lobsters, contaminants tend to accumulate in the internal organs, so that discarding these organs--variously known as the *tomalley, green gland*, or *mustard*--will eliminate most of the contaminants.

Information on advisories may be obtained by calling:

the New Jersey Department of Environmental Protection Hotline (609) 292-2943.



WHAT ABOUT FISH KILLS?

Excess nutrients in the water from sewage, storm water *run-off*, and other natural sources can cause algal blooms in the same way that fertilizer helps your garden grow. These high concentrations of algae can use up all the oxygen in the water and cause fish to suffocate. This is the cause of many of the fish kills that are reported along the coast or in our bays. There is no public health implication associated with this type of fish kill.

WHAT ABOUT THE CONSUMPTION OF RAW FISH?

The consumption of raw fish dishes such as sushi, sashimi, ceviche, and similar uncooked or lightly cooked fish dishes are becoming more popular. Because there is a small risk that parasites may be present in the fish that could cause human infections, it is recommended that raw seafood be solidly frozen and held at 0°F. for five to seven days.

WHAT ABOUT SEAFOOD THAT GLOWS IN THE DARK?

Harmless bacteria can sometimes cause seafood to glow in the dark. This is similar to the light that you see in fireflies on a summer evening. These bacteria flourish at cold temperatures and are sometimes found in surimi-based products, such as imitation crabmeat, or other fishery products that have been kept under refrigeration for a long period of time.

WHAT ABOUT PARASITES IN SEAFOOD?

Fish, like all living organisms, may contain parasites. There are very few marine parasites that can infect humans and documented infections are rare occurrences. The most commonly seen parasites are nematodes or round worms. Fish processors examine the product and remove parasites during the filleting process. According to authorities, cooking fish to an internal temperature of 140° F. will kill all parasites. This temperature is reached during the normal cooking process. Although many precautions are taken, you might sometimes find parasites in the fish that you purchase. Feel free to return the product to your fish dealer.

WHAT ABOUT CLAMS, MUSSELS AND OYSTERS ?

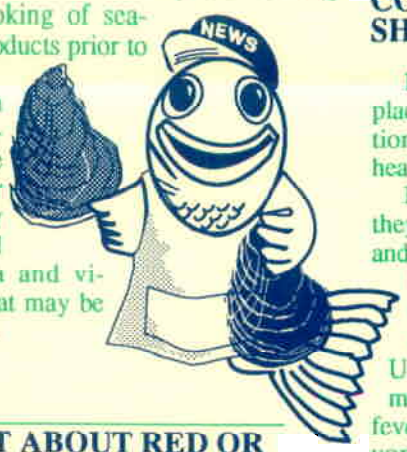
Because clams, mussels and oysters feed by filtering particles of food from the water in which they live, they have the ability to concentrate harmful bacteria and other microorganisms if they are present in the harvesting water. This could present problems, particularly when shellfish are obtained from waters which are not approved for the taking of shellfish and because clams, oysters, and mussels are often eaten raw. The New Jersey Department of Environmental Protection (DEP) has established water quality standards for the safe harvesting of shellfish and regularly monitors these areas to ensure that water quality is within safe limits. As part of the program, the DEP routinely tests thousands of water samples and in fact, New Jersey has more sampling stations than any other state on the East Coast.

There are conditions under which shellfish harvesting areas are closed quickly. One is: if they fail to meet state and federal standards for water quality. The other condition under which they are closed is: if some other form of pollution impacts the area, such as oil pollution. Shellfishermen are informed about such closings and the DEP's marine enforcement officers patrol the closed areas to apprehend those harvesting in unapproved waters.

The New Jersey Department of Health administers a certification program which requires all wholesale shellfish dealers to handle, process, and ship shellfish under sanitary conditions and maintain records verifying that the shellfish were obtained from approved areas. By law, each bushel of shellfish must have a tag indicating that it was harvested from approved waters and harvested by dealers licensed by the Department of Health. Shellfish samples are regularly collected from harvest areas, certified shellfish dealers and retailers for bacteriological examination. Also, inspectors routinely check the shipping containers of shellfish to be sure that wholesalers are providing proper identification tags which show the source of the shellfish. This system allows the health agency to trace shellfish in the marketplace back to the harvest site in the event that a problem is identified.

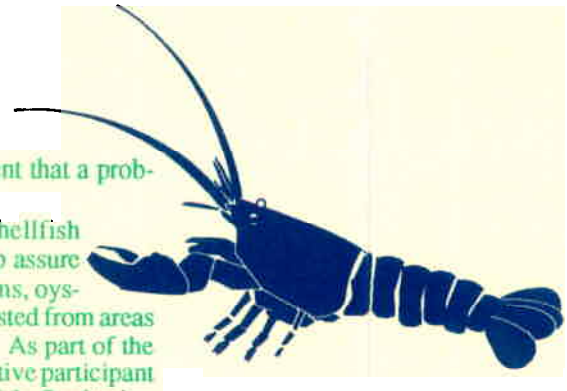
The goal of these shellfish safety programs is to help assure the consumer that the clams, oysters and mussels are harvested from areas of the state that are safe. As part of the effort, New Jersey is an active participant in the Interstate Shellfish Sanitation Conference, a national program administered by the U.S. Food and Drug Administration to provide for uniform adoption and enforcement of sound shellfish safety measures. These programs provide the consumer with additional safeguards since the shellfish purchased in New Jersey are often harvested in other states.

Finfish and crustaceans such as crabs and lobsters are usually not eaten raw and therefore do not present the same problems as clams and oysters. These seafood products are usually cleaned, gutted and cooked prior to consumption. Gutting and cooking of seafood products prior to consumption will remove and/or destroy harmful bacteria and viruses that may be present.



WHAT ABOUT RED OR GREEN OYSTERS?

Oysters are filter feeders and often tend to concentrate the pigments from the algae that they are eating. Green algae can cause a greenish color and red algae cause a reddish color. The coloration may not be obvious at the packing plant but appears later in the distribution chain. These discolorations are harmless and disappear when the product is cooked. However, a pink discoloration in oysters accompanied by an offensive odor is caused by the presence of yeast. These oysters should be discarded.



WHAT ABOUT BURN SPOT DISEASE IN LOBSTERS?

Although burn spots, characterized by a darkened or pitted section of the shell, represent a problem for certain crustaceans, there appears to be no human public health threat from this external bacterial infection. Lobsters and crabs are susceptible to this type of bacteria; people are not.

WHAT ABOUT CONSUMPTION OF RAW SHELLFISH?

Despite the safeguards that are in place, some illnesses from the consumption of raw shellfish are reported to health agencies each year.

Because shellfish are filter feeders, they can concentrate marine bacteria and viruses. One such bacteria called *Vibrio* is naturally occurring in the marine environment and is found most often in waters in the southern United States during the summer months. These organisms can cause fever, chills, abdominal pain, nausea, vomiting and other gastrointestinal symptoms. In a few high-risk individuals, particularly the immune-compromised (AIDS patients and cancer patients undergoing radiation therapy or taking immunosuppressive drugs), those with liver disease, or those recovering from stomach or intestinal surgery, the symptoms may be more severe, even life-threatening. Therefore, the New Jersey Departmemt of Health recommends that those with chronic illness such as liver disease or those whose immune systems are compromised should avoid the consumption of raw fishery products.

HOW DO I KNOW THAT THE SEAFOOD I BUY IS OF GOOD QUALITY?

1. Whole Fish - look for firm elastic flesh; a fresh *sea breeze* odor; bright red gills free of slime; and clear bulging eyes.

2. Fresh Fillets or Steaks - look for firm, moist meat; no gaping or separation from the bone; uniform color; no bruising, red spots, yellowing or browning at the edges.

3. Frozen Seafood - look for solidly frozen, glossy product with tight moisture-proof wrapping. When thawed, frozen product should pass the same criteria as fresh.

4. Mussels, Clams and Oysters - shells should close when tapped lightly.

5. Lobsters and Crabs - look for leg motion and good weight.

HOW CAN I BEST MAINTAIN QUALITY AND PROVIDE FOR THE SAFE HANDLING OF THE SEAFOOD THAT I EAT?

1. Keep seafoods cold. Keep fresh, smoked or pickled seafood products refrigerated at 32-40° fahrenheit. Thaw frozen seafoods in the refrigerator or under cold running water. Keep frozen products rigidly frozen until ready to use. Store in freezer at 0° F.

2. Handle raw and cooked products separately. Use separate cutting surfaces and utensils. Wash your hands after handling raw seafood and before handling cooked seafood.

3. Freeze fish before preparing raw seafood dishes like ceviche, sushi or sashimi. Whole fish should be gutted as soon as soon as possible, solidly frozen and held at 0° F for five to seven days. Thin fillets and steaks require less freezing time but seven days provides a margin of safety.

4. Cook fish thoroughly. Fish should reach an internal temperature of 140° F. A general rule of thumb for microwaving fillets is to cook at high power for approximately three minutes per pound. Because of the differences in ovens, some experimentation will be necessary. Allow large seafood dishes to stand after cooking to allow uniform heat distribution.

5. Purchase shellfish carefully. Buy raw oysters, clams and mussels only from reputable sources. If in doubt, ask to see the certified shipper's tag or check the shipper number on the container of shucked clams or oysters.

6. Keep live shellfish alive until ready to prepare. Don't cook or eat dead shellfish such as clams or crabs.

7. Refrigerate live shellfish properly. Live shellfish such as clams, mussels and oysters should be stored under well ventilated refrigeration, not in air tight bags or containers. Live lobsters and crabs should be stored in the refrigerator with damp towels over them.

8. Purchase seafood as the last item on your shopping trip. If the weather is particularly hot ask for some ice to keep your seafood fresh on the way home.

9. Proper preparation provides additional protection from any potential contaminants. If you are concerned about contaminants such as PCBs in fatty fish, there are a variety of preparation techniques that can be used.

Since many of these contaminants tend to accumulate in the fatty tissue, areas such as the belly flaps, dark meat along the lateral line and skin should be removed before cooking. Try to select smaller fish, e.g. bluefish under six pounds. Use cooking techniques such as grilling, broiling, or baking on a rack so that the fats tend to drip away from the fish. Coatings that hold in fats and oils should be avoided. Studies indicate that any PCBs that may be present can be reduced by as much as 50% using these preparation and cooking techniques.

Seafoods offer tremendous opportunity for variety since there are over six hundred species of finfish and shellfish commercially available in the United States. These products come from a variety of different areas. For example, some people might feel more comfortable with fatty fish from offshore waters such as tuna and mackerel. For folks who like a milder taste, there are a variety of local species such as tilefish, flounder, fluke, whiting and porgies. Other options may include farm-raised products such as salmon, trout, mussels and other shellfish. For the adventurous consumer, there are choices from all over the world. For example you might want to try orange roughy from New Zealand, tilapia from Israel, salmon from Scandinavia, halibut from the North Atlantic or tropical species like mahi-mahi and groupers. There are also traditional seafood favorites such as lobsters, shrimp, scallops, oysters and clams. No matter what your tastes, there is a seafood that's right for you. We hope that these ***Fish Tails*** *will provide you with useful information about seafood products.*