

Marine Resource Bulletin

Vol. 19, No. 2

Summer 1987





**Marine
Resource**

Bulletin

Vol. 19, No. 2 Summer 1987

Dr. Frank O. Perkins, Dean/Director
Virginia Institute of Marine Science

Dr. William Rickards, Director
Virginia Sea Grant College Program

Dr. William D. DuPaul, Director
Marine Advisory Services

The Marine Resource Bulletin is a quarterly publication of Marine Advisory Services of the Virginia Sea Grant College Program which is administered by the Virginia Graduate Marine Science Consortium with members at The College of William and Mary, Old Dominion University, University of Virginia and Virginia Polytechnic Institute and State University. Subscriptions are available without charge upon written request.

Sea Grant is a partnership of university, government and industry focusing on marine research, education and advisory service. Nationally, Sea Grant began in 1966 with passage of the Sea Grant Program and College Act.

C.M. Plummer, Editor
Kay Stubblefield, Graphics
Janet Walker, Typesetting

Cover: Sally Maness of the Grafton Seafood Market arranges spot on ice. Photo by Nan Brown.

Virginia Seafood logo developed by
VA Marine Products Board

Contents

Marine notes	2
Survey results	3
Marketing seafood	4
Marine Products Board	5
Farm Fresh	6
Tech Seafood Lab	7
Captain George's	9
People on the water	10
Handle with care	11
M&G Transportation	13
Fish house kitchen	16

Marine notes

VIMS Again Hosts Governor's School

Twenty of Virginia's brightest high school students will be assisting VIMS researchers for six weeks this summer. The students are participants in the highly-selective Virginia Governor's School Program, administered by the Virginia Department of Education, Programs for the Gifted, and coordinated at VIMS by Lee Lawrence of Marine Advisory Services.

In May, students and their parents visited the Institute to meet staff and scientists and tour the facility. Dr. Frank O. Perkins, Dean/Director, welcomed the group and described the research, advisory and education work performed at VIMS.

The VIMS Governor's School program operates cooperatively with a similar school at NASA/Langley Research Center. Both programs pair students with mentors who supervise student research projects. This is the third year students have worked at VIMS, and this year their assignments will include scallop, crab, oyster and finfish research, wetlands management and pollution problems.

Seafood seminars return this fall

Sue Gammisch, Sea Grant Advisory Specialist, has announced that the fourth seafood seminar series has been planned to start September 30. These highly acclaimed seminars feature prominent Virginia chefs preparing locally available seafood in the Sea Grant demonstration kitchen at the Virginia Institute of Marine Science. The series are designed and coordinated by Gammisch and Donna Soul, Seafood Utilization Specialist with Virginia Polytechnic Institute and State University.

The upcoming programs, called "House Specials," will feature seafood dishes which have become identified with some of Virginia's finest restaurants. During each program, participants are free to ask the chef questions as the meal is prepared. Then, as the chef and

participants enjoy the creation in front of the VIMS' aquaria, a representative from one of Virginia's 35 fine wineries describes the wines selected to be served with the dinner. This series will include a Sunday champagne brunch and six evening classes held on consecutive Wednesday evenings.

One of the featured chefs will be Marcel Desaulniers, of the Trellis Restaurant in Williamsburg. Desaulniers was the 1986 winner of the Governor's Cup, an award presented annually to the best seafood entrant in a state-wide invitation contest for professional chefs.

For information about the series, contact Sue Gammisch at 804/642-7169 or write her c/o Advisory Services, Virginia Institute of Marine Science, Gloucester Point, VA 23062.

Artificial Reef Fishermen Sought by Advisory Services

The Sea Grant Marine Advisory Services at VIMS has begun a study of fishermen's catches on the Commonwealth's artificial reefs. Funded by Wallop-Breaux funds administered through the Virginia Marine Resources Commission, the study seeks to identify a broad cross section of private boat and charter fishermen fishing the reefs with some degree of regularity. An analysis of catch and fishing effort data from such fishermen will assist VMRC's Artificial Reef Program in evaluating the maintenance and expansion of existing, as well as new reef sites. Jon Lucy, coordinator of the study, and graduate assistant Charles Barr urge private boat owners fishing the reef sites to contact them so that their names can be incorporated into the study's random telephone survey. Fishermen participating in the study will only be contacted a few times during the fishing season to determine catches made on recent reef fishing trips. Individual catch information will be kept confidential and only a summary analysis of catches will be included in the study report. To assist with the study, fishermen can also place their names on reef study flyers recently distributed among marinas and tackle shops.

(continued page 18)

READER SURVEY RESULTS

Although it has only been a few weeks since the last Bulletin was mailed as we go to typesetting with this issue, we have already received more returns than expected.

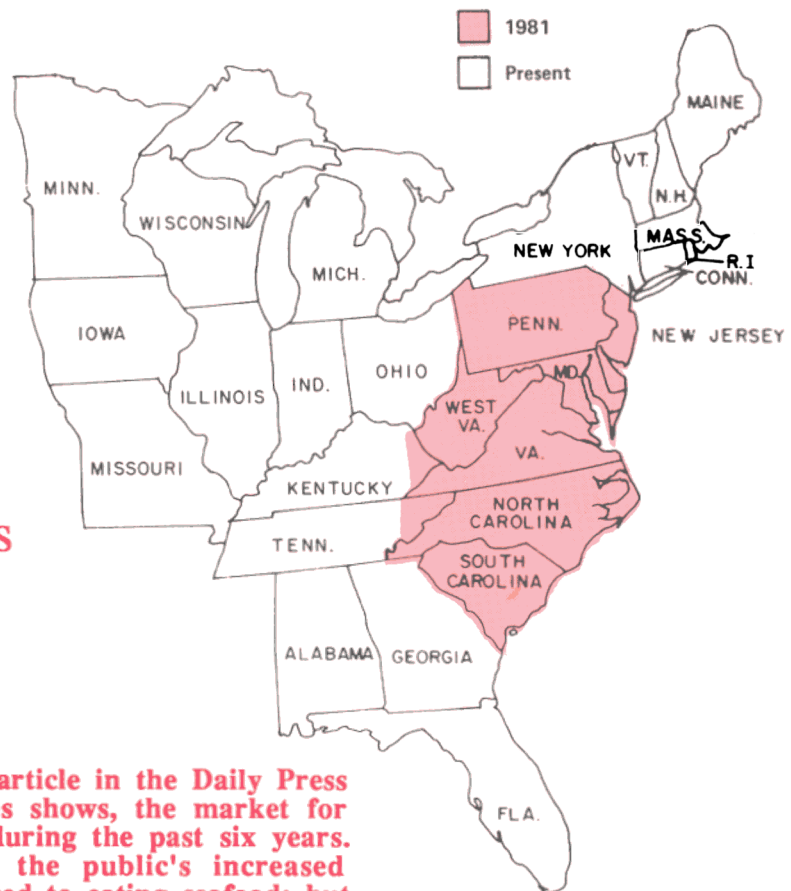
Dr. John Boon's "Northeasters and high tides," was the article most sighted as "very interesting" and the type of article you enjoy. The Fish House Kitchen by Donna Soul is your favorite feature.

And recreational, marine fishermen of Virginia—we apologize for not printing more about what you want to know. Beginning with this issue we will increase the coverage of marine sportfishing and scientific information about the species and their habits that you have requested.

Thank you, one and all, for responding to the survey. We will make every effort to fulfill your requests for more information on the topics that interest you.

C. Plummer
Editor

Growth of Virginia seafood markets



As this illustration from a recent article in the Daily Press by business reporter Kathleen Earles shows, the market for Virginia seafood has nearly tripled during the past six years. Part of that expansion is due to the public's increased awareness of the health benefits related to eating seafood; but the choosing of Virginia seafood products over others available is the result of some very hard work on the part of Virginia state agencies, regional foundations and the Virginia seafood industry. This annual seafood marketing issue introduces some of the people behind these efforts.

adapted from
the Daily Press, Inc.

MARKETING VIRGINIA SEAFOOD



Bill DuPaul during his second trip to Hong Kong to aid mid-Atlantic efforts to increase export sales to the Orient. DuPaul works with the seafood industry by researching Virginia seafood products which will appeal to foreign consumers and then helps direct advisory efforts to assist the industry in harvesting, handling, packaging and marketing their products. Dr. DuPaul is Director of Sea Grant Marine Advisory Services for Virginia and a senior marine scientist with the Virginia Institute of Marine Science. Trips are conducted on behalf of the Gulf and South Atlantic Fisheries Foundation.

Wanda Cohen

A carefully orchestrated endeavor among watermen, processors, wholesalers, researchers and promoters has resulted in a burgeoning national and international market for Virginia marine products. At the center of this development are the Virginia Sea Grant College

Program, Virginia Marine Products Board, Virginia Agriculture/Consumer Services, the Mid-Atlantic and Gulf and South Atlantic Fisheries Development Foundations. Working cooperatively, watermen, processors, scientists and marketing specialists coordinate their efforts to benefit every segment of the industry.

The primary message to the national and international market has been twofold: seafood provides excellent nutrition

and Virginia harvests consistently high quality products year-round. Dr. William DuPaul, Director of Virginia's Sea Grant Advisory Program, explains that the goals are to educate both buyers and consumers on purchasing and preparing seafood and to find the best market position for our products.

Virginia is the nation's third largest producer of marine products (only Alaska and Louisiana produce more). Of the 4,500 licensed fishermen in the state,

2,725 work in Hampton Roads and adjacent offshore waters. Department of Commerce figures show the industry provides nearly 18,000 jobs and is worth \$442 million annually to the state's economy. Preliminary landing figures collected by the Virginia Marine Resources Commission show the top twenty commercial species harvested in 1986 totaled 119 million pounds with a dockside value of \$61 million. These figures exceed 1985 landings by 10% in pounds and 19% in value.

Nationally, an increased awareness of health and diet as well as a greater interest in trying new foods has led to more seafood consumption. By 1986, Americans were consuming 14.7 pounds of seafood per person annually. However, research has shown that while people frequently order seafood from the menu while dining out, many do not feel comfortable buying the products to prepare at home. An education campaign geared toward helping consumers learn to purchase and prepare seafood has been a major part of the overall marketing program.

Donna Soul, Sea Grant Seafood Utilization Specialist with the Virginia Tech Seafood Lab in Hampton, explains that often consumers are not aware that, when properly prepared, under-utilized species such as croaker, blue fish and

(continued page 6)



Shirley Estes Berg presenting former Governor, Charles S. Robb, with a satellite photo of the Bay during the 1985 Governor's Tasting. The present was given by Virginia's seafood harvestors and processors to thank Governor Robb for his efforts on behalf of the Bay clean-up.

Marine Products Board markets Virginia seafood

Shirley Estes Berg is Executive Director of the Virginia Marine Products Board, a state agency whose membership is composed of processors and harvestors of Virginia marine products that supply retailers, restaurants and wholesalers throughout the U.S. with fish and shellfish. Under her dynamic leadership, the Board has become one of the top seafood marketing concerns in the United States.

Berg says the secret to the Board's success is planning. "We're methodical in our business practice," she says, "we make a one year plan and stick to it; at the same time we look two to three years down the road and have a good idea of where we want to be and how to get there."

Part of the challenge for Berg has been adjusting from manufacturing marketing, her previous job, to marketing a product that may or may not be available. "For instance, we don't market croaker, we market a pan fish because marketing is done before we know what specific fish will be abundant," Berg says.

The first part of the marketing process is a study of the

distribution network from processor to potential market. "We look at where the trucks are already going and then expand the seafood market in that direction."

One of their most successful promotional campaigns to date has been with the soft shell crab. "Three years ago," according to Berg, "when Virginia began the campaign, people outside the coastal area didn't know about soft shell crabs. By doing a successful national and international publicity campaign centered out of New York City, we attracted national and international media." Last year Virginia's sales of soft shell crabs increased by 100,000 dozen.

The future for marketing Virginia seafood looks extremely bright according to Berg. "All I need are more hours in the day and more days in the week." Shirley Berg already packs more hours into an average day than most people. During seafood month she will manage to be in even more places, spending more hours marketing the quality of Virginia's seafood products to the nation and to the world.

Marketing (cont.)

mackerel can be exceptionally tasty as well as nutritionally sound and economical. Making information available through newspaper articles, brochures and local television programs is one avenue used to educate consumers. Hospitals, schools, colleges and other institutions are expressing interest in adding more seafood to their menus. Soul feels this indicates the public is more aware of the nutritional value of marine products and in response, food service personnel are interested in learning how to handle and prepare the foods.

Both Soul and Sue Gammisch, Sea Grant's Marine Education Specialist, work with buyers and retailers to develop ways to enhance market presentation of seafood products and provide recipes and substitution tips for consumers. Gammisch has coordinated a standing-room-only series of seafood cooking classes for the past year. Chefs from leading area restaurants demonstrate preparation of seafood dishes in a demonstration kitchen where participants are free to ask questions, taste, touch and try various techniques of cleaning, cutting and seasoning. "I am no longer afraid to buy flounder fillets or even squid because I have a good idea of how to prepare it. Not only that, I found out it is good!" said one participant.

Since 1980, the Virginia Marine Products Board, funded by industry, has been responsible for marketing Virginia seafood. Although there are nearly 200 seafood-related businesses in Virginia, most are small and lack the staff and expertise to effectively promote and market their products. This umbrella agency serves the entire industry. The Board's goal is to create and maintain a distribution network in the retail market.

Director Shirley Berg explains that their approach includes market research, marketing campaigns, research and development and promotion. Board representatives attend domestic and foreign retail food and restaurant shows each year.

New products are often introduced to an area through restaurants. For example, bluefish, which is a common product to us, is one new product that is receiving a great deal of attention in the Ohio area. When a contact expresses interest in a product, the Board puts them

(continued page 7)



Seafood boutiques such as this one in a Farm Fresh Richmond store highlight seafood products. Personnel are specially trained to assist buyers.

Farm Fresh Seafood Boutiques

Farm Fresh Supermarkets recently tested the newly-released series of "Simply Seafood" point of purchase videotapes at one of their store locations. The program was developed in conjunction with the Food Marketing Institute, the National Fisheries Institute, the Gulf and South Atlantic Fisheries Development Foundation and the Virginia Marine Products Board. The videotapes cover the "waterfront" for consumers and teaches them in a variety of 60-90 second spots how to purchase and prepare fish and shellfish. Featured on the tapes are Sue Gammisch, Sea Grant Advisory Specialist, and Marcel Desaulniers of the Trellis Restaurant.

In 27 (60-90 second) spots, "Simply Seafood" provides elegant but casual recipes for baking, broiling, grilling and frying a variety of species, from the familiar flounder to the more exotic shark. Recipe cards are displayed near the video so shoppers don't have to transcribe them while watching the cooking demonstration.

The video also includes tips for selecting, handling and storing fish, removing cooking odors and substituting species in recipes. The

lively, concise videos catch and sustain customer attention.

According to Susan Mayo, Farm Fresh spokesperson, "Sales as a percent of distribution for the four-week test period increased 14 percent and total department sales increased 11 percent."

Of Farm Fresh's 66 supermarkets, 30 have full service seafood boutiques and 24 have full service seafood cases and/or a full service seafood section adjacent to the meat department cases. The seafood boutique is like a store within a store.



"Simply Seafood" appeals to shoppers and in test markets, increases sales for the grocery store.

Marketing (cont.)

in touch with a local producer or wholesaler and continues support by providing information on ways to identify fresh products, and protect its shelf life as well as handling and display, and preparation suggestions.

"Education at the restaurant and retail level will trickle down to the consumer," says Berg. Once a product catches on in an area, sales become self-perpetuating. Then it is time to introduce a new product. Since it is impossible to put a brand name on fresh marine products, the Board's campaign is aimed at making the term "Virginia seafood" synonymous with a fresh, reliable, high quality product.

The Board regularly places articles and ads in over forty of the nation's largest

newspapers as well as numerous retail food and restaurant trade journals and hosts tours of Virginia processing plants and aquaculture research sites for editors of major food publications. The result of this comprehensive marketing plan is that six major food chains, including Big Bear and Tom Thumb in the mid-west, now regularly purchase seafood from Virginia. In 1981, our marine products were primarily sold only in the mid-Atlantic states from Pennsylvania to South Carolina; today the market has expanded as far west as Minnesota, Iowa and Missouri with regular sales of some products to California.

Recently the VMPB in conjunction with the Food Market Institute, National Fisheries Institute and Gulf & South Atlantic Fisheries Development Founda-

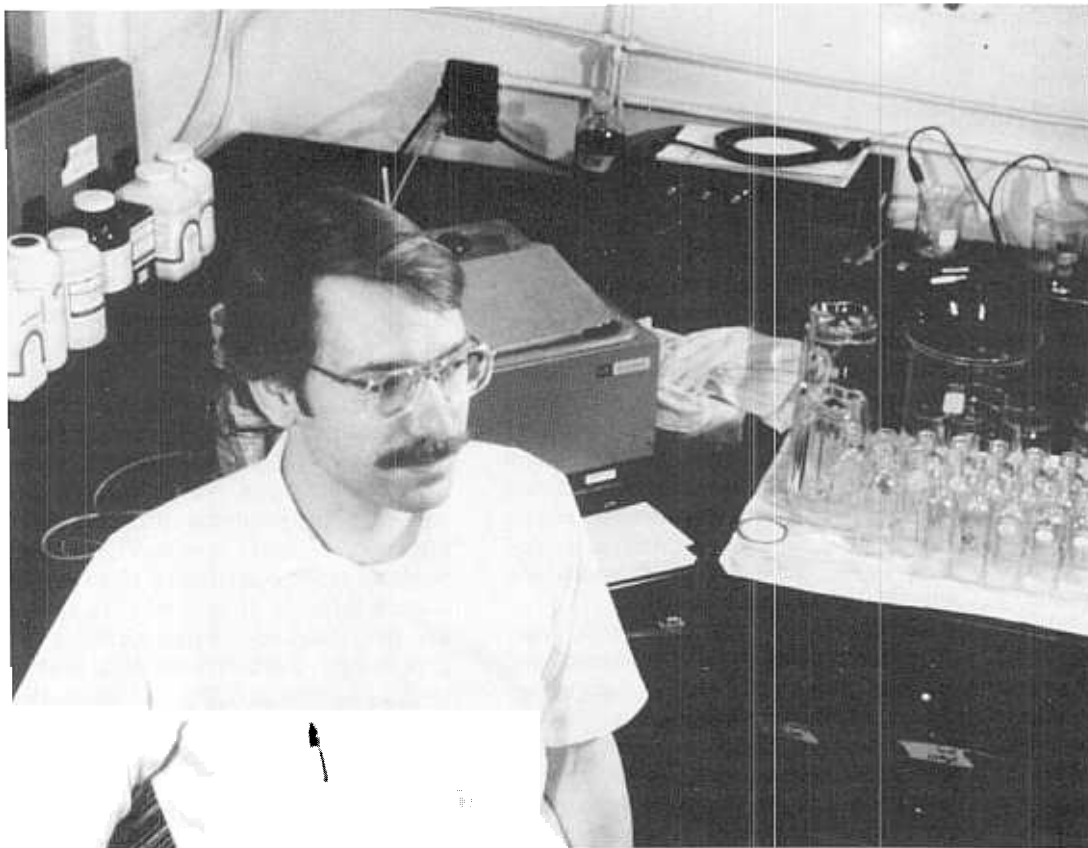
tion produced the first point of sale video for seafood. Taped in the demonstration kitchen at VIMS, the video entitled "Simply Seafood" is a tool to be used nationwide.

Professional chefs demonstrate cleaning and preparing seafood products emphasizing that the foods can be prepared in many ways other than baking or frying. Both simple and gourmet ideas are presented, and printed copies of the recipes are placed near the monitor for shoppers to take home.

"We also utilized the video to educate consumers on substituting one species or product for another," said Sue Gammisch, who appears in the videos.

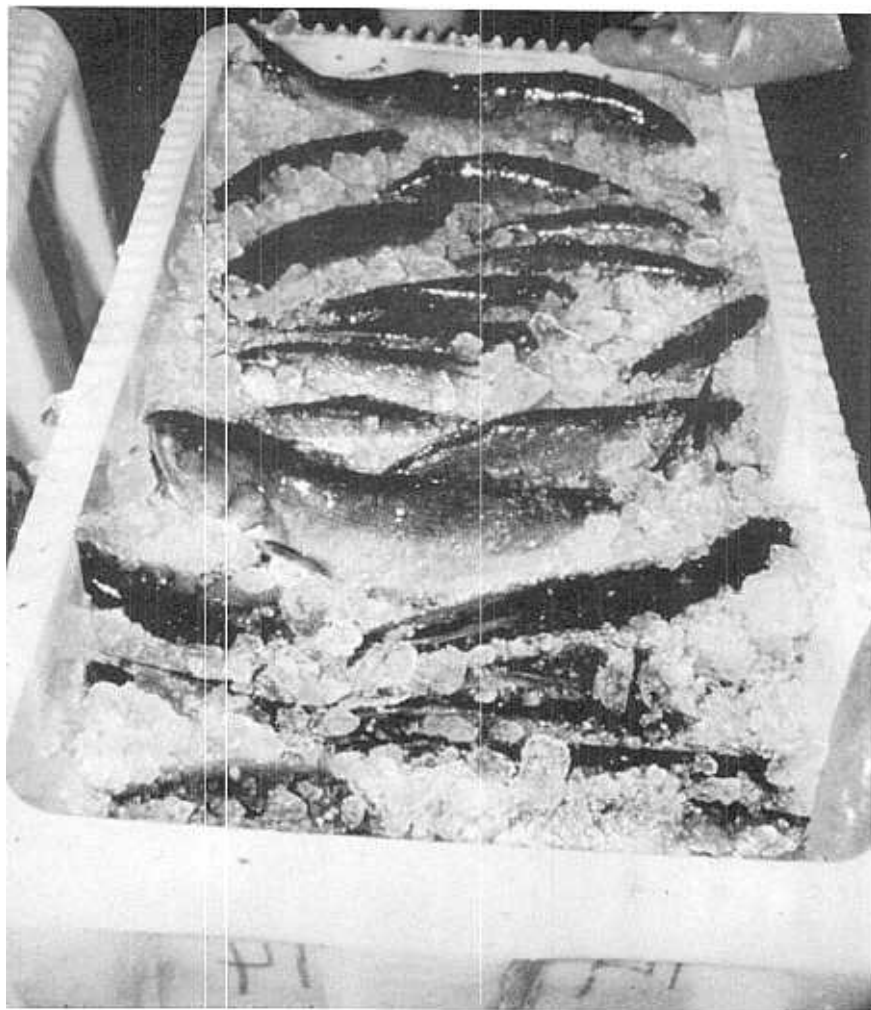
The tapes are available for sale to any retail grocer nationally. Clair

(continued page 8)



Tom Rippen, Marine Advisory Agent with Virginia Tech in Hampton, in one of the laboratories where Tech scientists study seafood products.

"All factors of seafood production, from harvest to processing to transportation, have to be constantly monitored and evaluated to maintain a consistently high quality product."



Freshly caught finfish are packed and iced in commercial "Pers" boxes which increases the quality of the product. Quality improvement procedures developed by VIMS and VPI Advisory and Extension professionals help fishermen garner higher prices for their catch. Funding was provided by Sea Grant and the Mid-Atlantic Fisheries Development Foundation.

Marketing (cont.)

Vanderbeek with the National Fisheries Institute says the video, which was produced just a few months ago, has already sold 40 sets. She feels this is a good indication that this kind of marketing definitely has a place in the seafood industry. The only study at this time shows seafood sales up 11% at the test grocery market during the month the tape was available.

Aware that remaining competitive means remaining innovative, the industry supports ongoing research and development studies. One of the most exciting projects currently underway is on packaging pasteurized crab meat. Using this process, the product retains its flavor, texture and moisture for up to six months when refrigerated.

Tom Rippen, Marine Advisory Agent with Virginia Tech Seafood Lab in Hampton, says that one company in Maryland now packages the product in

metal cans; the disadvantage, however, is that metal packaging is associated with processed, institutional type foods. Although: this is a problem with perception because the quality of the product is the same whether it is packaged in metal or plastic, perception can make the difference in a market product being successful or not. Plastic connotes freshness to consumers and conveying the idea of freshness is essential in seafood products.

Rippen is working with two manufacturers testing the performance of various plastics for use in packaging. The problem has been in finding the right polymer that can either resist distortion during the heating and cooling process or snap back after the process is completed. Additionally, plastics can be shipped and stored more efficiently because they can be nested. Another advantage is the option of marking the lids to produce a resealable "margarine

tub" type container that adds the convenience of being able to use only a portion of the product and reseal the remainder for use later.

Traditionally the seafood industry has been primarily off the boat, on ice and to the store. Today many companies are looking at more value added and convenience products through more preparation and processing before products reach consumers. Sea Pride in Hampton is one of only two companies in the country using chill-pack processing. Each dressed fish, filet or steak is chilled to 28°F and packaged. The product is transported and sold by the retailer in the same package. This adds 10 days to the shelf life of the product. Using their own fleet of refrigerator trucks, Sea Pride delivers the product to markets in Iowa, Missouri, Kansas, Nebraska and Texas.

(continued page 13)

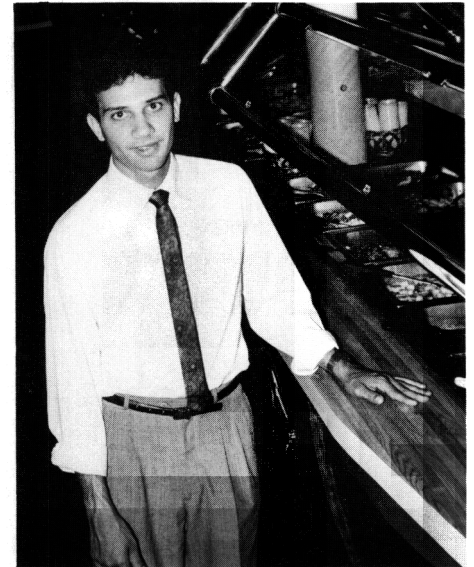
CAPTAIN GEORGE'S SEAFOOD RESTAURANT

*Virginia's largest indoor restaurant
Serves the best of local seafood*



Greg Morgan holds customers' favorite, Crab Imperial. Morgan is a student at Christopher Newport College who works at Captain George's on weekends. (right)

Archie Pitsilides, co-manager of Captain George's in Williamsburg, stands by the restaurant's seafood buffet. (far right)



on the crowd. "If I see we're getting low," says Andreou, "We'll pull another 500 pounds of seafood out and prepare it. Even at that we seldom have more than 1/15th of what we've prepared left."

The secret to figuring the numbers according to Andreou is, "Keeping historical records. For instance, you know that Mother's Day is the biggest restaurant day of the year, but by keeping accurate records you know EXACTLY how many you served the year before and the year before that." Those records work equally well for the rest of the year, particularly in a town based on tourism such as Williamsburg.

Each week Andreou calls around to the local dealers to see what they expect to have in and how their prices compare. "If they say they have a new product or a better product, I sample it first. If it's good, we buy it. We make an effort to buy the majority of our products locally, because they're freshest."

What brings thousands of people a day to the Captain George's restaurants? According to Andreou it's a simple formula, "Quality food, good atmosphere, quantity and good price capture customers."

With a capacity of 1,200, Captain George's Seafood Restaurant on Route 60 in Williamsburg is the largest indoor restaurant in Virginia. On weekends nearly 3,000 diners a day are fed and the majority come for the seafood, served as a single entree or from the famous seafood buffet.

George Pitsilides started the first Captain George's in Hampton in 1975. Today there are five similar restaurants all specializing in seafood and all with a nautical motif. Combined, the stores in Hampton, Pungo, Williamsburg, Virginia Beach and Richmond employ nearly 500 people.

Archie Pitsilides is one of four managers at the Williamsburg location; he started at 16 working as a busboy and has since worked in all of the restaurants. "The most popular dish is the Crab Imperial," he says,

"Followed closely by steamed shrimp, cold crab salad and cold shrimp salad." "People either choose all steamed or all fried seafood," he added. "Normally we serve about half and half; half fried, half steamed."

Cleanthis Andreou is kitchen manager at the Williamsburg restaurant. It is his job to make sure there is enough food every night. "We

"We use 5-7,000 pounds of crab meat a week..."

use 5-7,000 pounds of crab meat a week, 10,000 pounds of crab legs, 2-2,500 pounds of shrimp a week and a variety of mussels, fish, oysters, clams and other seafoods." The kitchen staff starts at 8 am and often works late into the evening depending

People on the water



Keith Gore opens the door of the Beach Smokehouse's giant smoker. The Gores use only hickory for smoking seafood and poultry.



June and Keith Gore of Virginia Beach have a great thing going - the Beach Smokehouse located on Norfolk Avenue. Over the past seven years the couple have created a market for smoked seafood and poultry where none existed.

The art of smoking foods for taste and preservation goes back to earliest times and existed in nearly every culture. But in the United States, smoked products have only been popular in a few regions. Herring, for instance, are caught in the United States, smoked in England and then re-sold in the U.S. northeast.

Keith Gore learned to appreciate smoked fish during long sailboat cruises in the Caribbean. The fish kept well and continued to maintain taste appeal when kept refrigerated or

iced onboard. Gore began researching fish smoking and then bought a tiny smoker to try his hand at producing smoked fish. June says she knew something was up when smoked fish began appearing on clothes lines in their kitchen, hung by tiny clothespins.

In 1980, the Gores rented a small building and had a smoker built. They began marketing their products to local restaurants and quickly added poultry. They have created a market in the Hampton Roads area for smoked fish and poultry that is so successful they have trouble keeping extra products on hand. Their growing mailorder business is particularly popular at Christmas time, and the deli they started at the same location became so popular and busy they have leased its

operation to Randy and April Tennien so the Gores can concentrate on smoking.

The work area is immaculate; one large room is dedicated to preparing the fish and poultry for smoking and a second room is completely taken up by a huge smoker which holds up to 400 pounds of poultry or 150 pounds of fish. In addition to large gamefish, the Gores also hickory smoke shrimp, scallops, mussels, oysters and a wide range of finfish.

The finished products are vacuum packed and will keep two weeks under refrigeration, up to a year in the freezer. The Gores say there is some confusion about keeping their smoked products; smoked foods must be refrigerated.

At present there are six employees at the Beach Smokehouse. Their goal is to produce 1,000 pounds of hickory smoked products a week; a goal they may achieve this year.

Some of the gamefish they smoke comes from recreational fishermen. If you're interested in having the Gores smoke your catch, please read "Caution - Quality at Risk - Handle with Care" on this page. If you want to get on their mailing list for smoked products, call Beach Smokehouse at 804/428-2281.

Following these guidelines could also get you a very good deal on smoked fish. Keith Gore has offered gamefish fishermen an opportunity to have their fish smoked at the Beach Smokehouse (see article this page). However, there are several conditions. The minimum amount which will be accepted is 50 pounds per product, and the fish must be in excellent condition. The fish should be gutted and iced according to the directions provided by Nancy Chartier. The fish may have been frozen, in fact it is preferred that way. You should also call the Gores to make arrangements and make sure that they have room to smoke the fish.

One of the Gore's favorite smoked fish recipes.

SMOKED FISH SALAD

2 cups smoked fish, flaked
 1/4 cup sweet cucumber relish
 3/4 cup celery, diced
 1 tbsp onion, grated
 1/2 cup mayonnaise
 Basic Seasoning or salt and pepper to taste
 1 tbsp lemon juice
 1/4 cup light cream

Combine smoked fish, relish, celery, and onion. Blend mayonnaise, seasoning, lemon juice, and cream; mix with fish-relish mixture and chill. Mound in lettuce cups. Serve at once.

Serves 4 to 6.



Nancy Chartier, VIMS' graduate student is using a Torrymeter which measures characteristics of the tuna skin and muscle tissue as an indication of freshness.

CAUTION QUALITY AT RISK HANDLE WITH CARE

Nancy Chartier
 Graduate Assistant
 Sea Grant Marine Advisory Services

The quality of the fish that ends up at your table after a day of recreational fishing is directly affected by the way it was handled. From the time a fish is landed on your boat to the time it is eaten, protection of the quality of the meat's flavor, odor, texture, and shelf life should be of utmost importance. Onboard deterioration of the quality of your fish can be retarded simply by using some care in handling and an adequate amount of ice. The following guidelines should be helpful in making the best of your recreational catches, resulting in more appealing and better tasting fish.

1. Once a fish has been landed onboard, it should be killed immediately. Bruised flesh and soft, mushy fillet textures may result from allowing a fish to beat itself to death slowly in a cooler.

2. Evisceration (gutting) is the next step, if boat and sea conditions allow. This step is especially important for smaller fish which can deteriorate more rapidly than larger ones. Removal of the gut and intestines eliminates a large

source of bacteria from your fish that could cause spoilage.

3. After evisceration, the fish can then be bled. Sometimes bleeding occurs incidentally to gaffing. Bleeding can improve the odor and color of fish fillets, especially those fish with a high percentage of red muscle (for example, tuna). Cutting the base of the tail (caudal peduncle), making slits under the pectoral fins, or removing the gill covers (opercula) are common bleeding techniques.

4. If possible, a fish should then be rinsed off to remove slime and blood before it is iced.

5. Proper icing of a fish is the most important factor in preserving the quality of your fish. Rapid chilling of the fish by packing its belly with ice (if eviscerated) and completely surrounding it with more ice is crucial to slowing quality degradation. It is especially important to ice quickly and substantially fish that are caught in warm temperate

(continued)

waters (like those of Virginia), since spoilage occurs more rapidly under warm conditions.

Recognizing that you are forced to work within the constraints of your particular vessel with regard to space and working conditions, the guidelines listed above are general ones. Too often, inadequate amounts of ice are carried onboard recreational vessels. If a day of fishing turns out to be very fruitful, careful consideration should be given to the amount of ice you've brought and the available storage room in the fishbox or cooler. Leaving fish to lie covered or uncovered on boat decks or piling them up in fishboxes with little or no ice encourages rapid spoilage, which can lead to unsafe meat and/or wastage.

There are other factors that affect the quality of the meat that you have no control over. These include the health of the individual fish, its state of exhaustion, the stage of its spawning cycle, whether or not the fish had been actively feeding when caught, and environmental conditions such as the temperature of the water. However, following these guidelines should help to preserve the quality of your catch, making it the freshest and best tasting ever.

For more information on preserving your catches, write to: Marine Advisory Services, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062.

Two excellent brochures for recreational fishermen have been prepared by Joyce Taylor, University of North Carolina Sea Grant Seafood Education Specialist. They are available without charge by writing to:

UNC Sea Grant College Program
Box 8605
NCSU
Raleigh, NC 27695-8605

Request brochures by number

UNC-SG-86-26 Bringing the Catch Home. Describes the proper handling of fish and shellfish from catch to freezer. Detailed instructions for packing in ice and also how to prepare for freezer.

UNC-SG-86-10 Dressing Finfish. Detailed instructions with illustrations on how to clean and fillet a fish or cut it into steaks.

Because the Beach Smokehouse meets USDA standards, only high quality, carefully treated fish can be smoked there. When available, the Gores are willing to swap already smoked fish for fresh fish, particularly if the fisherman is from out of town. Also, if there is a large quantity of fish, you may be able to work out a trade so that your costs for

smoking will be minimal. If you have never smoked fish before, one thing you should know is that a very large fish reduces to a small amount of fish fillet. For example, a gamefish with a large head may weigh 50 pounds when caught, but the smoked fillets may only be fifteen pounds.

Finally, taking care of your fish onboard could change how you and your family view eating your catch. The difference in taste in properly handled catch is very noticeable. Fish that are not gutted and properly handled often have a very strong taste, particularly disagreeable to most children.

Editor

Sea Grant Publications
For Recreational Fishermen

A series of brochures describing the habits of many of Virginia's most popular fin and shellfish are available. Each brochure also contains fishing, migration, economic value and includes recipes. The brochures are free upon written request.

The American Shad
The Bluefish
The Black Sea Bass
The Spot
The Flounder
The Seatrout
The Croaker
The Blue Crab
The American Oyster
The Hard Clam
The Soft Shell Crab
The Monkfish
The Bluefin Tuna

Advisory No. 22, Chart of Fish Havens off Cape Henry, Va. is available for fishermen particularly interested in fishing for sea bass and tautog. The Chart shows the locations of wrecks, artificial reefs and other bottom obstructions which are feeding locations for these fish. The area covered is the mouth of the Bay to about 30 miles offshore and south to the North Carolina border. The cost of the chart is \$1.00.

To order any of these publications, send your request to: Publications Request, Sea Grant Advisory Services, Virginia Institute of Marine Science, Gloucester Point, VA 23062. (Include payment to "Sea Grant Communications" if applicable.)



Graduate student, Charlie Barr, assists Chartier with her tuna quality handling research.

Marketing (cont.)

Lab scientists also work with processors to improve and maintain quality operations. In any food processing facility, there are inevitable times when problems such as high bacteria counts arise. The lab assists in tracing, identifying and controlling these problems.

Other on-going studies at the Seafood Lab are aimed at identifying impediments to marketing seafood products inland. On board, packaging fish in boxes and storing the boxes on shelves reduces pressure and damage to the product. Studies in conjunction with Kroger grocery chain focus on identifying the species that have the best shelf life for shipment to particular areas.

For example, oily fish like bluefish have a short shelf life and are not likely to arrive looking fresh after a long trip by truck. The "Fish Washer" is one

(continued page 14)



Refrigerated trucks at the M & G Transportation terminal in Gloucester.

M & G Transportation

M & G Transportation in Gloucester has been transporting seafood from Hampton Roads to the Baltimore and Philadelphia seafood markets since 1947. In those forty years there have been a lot of changes, according to Carl D. Thomas, President of the company. Thomas took over management of the firm in 1980.

"Years ago we packed just in ice and transported to market," Thomas says. "Today we have refrigerated trucks that maintain a temperature just above freezing." The modern 44-foot trucks can carry 45,000 to 47,000 pounds of fresh seafood.

Every day Archie Carter of M & G makes the rounds of piers and fish houses to pick up the day's catch. By early evening he's back in Gloucester ready to load the big trucks. The loading begins at 6 pm and includes shipments of products from further south, such as calico scallops from South Carolina, destined for more northern markets.



Workers load seafood packed in ice into a refrigerated truck. When seafood is plentiful the trucks are filled with nearly 47,000 pounds of fresh crab, finfish, and other Virginia products.

Arthur Eastwood, a Gloucester fisherman, brings his day's catch of shad, croaker, catfish and bluefish to the loading dock at M & G just before the driver arrives. Eastwood fishes year-round, switching from finfish to crabs and back again depending on the season. He packs the fish in ice onboard his boat in coated boxes. The boxes are the last load for this shipment.

At 7 pm the driver arrives and by 2-3 am fresh Virginia seafood is arriving in Philadelphia after a stop in Baltimore. During the weekend a truck goes to Pittsburgh, another good market for Virginia seafood.

Despite the growing popularity of Virginia's various marine products, Thomas says that M & G just isn't seeing as much as they used to. "Twenty years ago," he says, "we sent three trucks a day out of here and all we handled was seafood." Now the company transports bottled drinks and other products to make up the difference. "Early spring was particularly bad," Thomas says. "There just weren't any crabs and very few clams."

Carl Thomas hopes that by summer the M & G trucks will once more be packed from top to bottom with the full range of Virginia's seafood.

Marketing (cont.)

product being tested that shows promise. Fin fish are taken directly from the boat and passed through high pressure spray nozzles. In some species, the natural bacteria count is reduced by 99% adding 2-4 days to their shelf life. This can be very significant to wholesalers and distributors working with a mid-west market.

Transporting such a sensitive product also requires special attention. Most seafood is transported in refrigerator trucks. Products are placed in plastic, snap-top containers surrounded by ice. Compartments are kept just cold enough to prevent the ice from melting too fast. Maintaining temperatures around 35°F to 36°F keeps the products at close to 33°F. Similar packaging is used to ship by air although most airlines are not equipped to provide refrigerated compartments and many are not experienced in handling marine products. The VPI Lab is looking into ways to improve product handling for processors and airlines. Rippen stresses that all these elements have to be constantly monitored and evaluated to maintain a consistently high quality product.

Improved technology and a strong marketing program have resulted in a steadily expanding market. Local wholesaler, Dan Kauffman with Amory Seafood Inc. in Hampton says they currently have a strong market for croakers in some mid-west areas, a big market for flat fish (flounder) in the Chicago area, and a well established market for mackerel in the northeast.

He also notes that seafood markets remain fairly traditional, "A fish that will sell well in one community won't sell 30 miles away in another community." In the past, most seafood consumers have either been upper or lower economic groups. The trend is clearly changing as studies and market demand show consumption is definitely up in all income groups.

Wholesalers are basically dealing with a commodity, and like other commodities the laws of supply and demand come into play. Amory regularly ships clams and scallops to west coast distributors. "Even when prices are high, this market remains open to us because, by reputation, Virginia clams last longer than Florida clams," says Kauffman. Scallops that are not native to the West coast are also a high demand product, and

when packaged in cotton bags they have an especially long shelf life.

With this rapid growth and expansion, some wholesalers and retailers are concerned that the high demand and increased prices could lead to problems. Robert Lawson, a Hampton retailer, wonders if we are "in danger of pricing ourselves right out of the market." In the long-range best interest of the industry as a whole, there is a feeling that it is not too soon to begin to pay attention to potential supply side problems.

Serving as a watchdog, the Virginia Seafood Council follows the status of state and national legislation that could affect processors and packers. The Council worked with the Environmental Defense Fund and the Chesapeake Bay Foundation on a state and national level against the use of TBT. Members of the Council also sit on the Mid-Atlantic Fisheries Development Foundation and the Gulf & South Atlantic Fisheries Foundation to keep local packers and processors informed about the industry in other states and how they are handling

U.S. Seafood consumption per person continues to rise. In 1986, Americans ate 14.7 pounds per person. In the late '70s, the typical American ate only 11 pounds of seafood a year.

problems. The Council is a non-profit trade association that gives time and vocal attention to issues that are relevant to the industry. Charles R. Amory, an officer of the Council, says, "There is a certain camaraderie among those in the seafood business; if the industry sticks together, we're apt to be heard a little quicker."

Developing an export market required patience and persistence. Sea Grant in conjunction with the Virginia Department of Agriculture/Consumer Services, and the Gulf & South Atlantic Fisheries Foundation explored export possibilities for several years before they found a successful market niche to open doors for introducing more Virginia products abroad. It is not surprising that soft-shell crabs, a delicacy we on the coast enjoyed almost exclusively for years, became the first highly successful product from the Chesapeake Bay on the foreign market.

As more efficient shedding tanks were developed, the potential for large-scale production was evident. Ironically, initial attempts to introduce the product through foreign hotel and restaurant trade shows were not highly successful. Five to six years ago there was virtually no export market for crabs and today it is a multi-million dollar business with exports to at least fourteen countries.

The turning point came three years ago when Bill DuPaul from Sea Grant, Terry Conway, the region's largest soft crab processor, and Peter Law, an export agent from the Virginia Department of Agriculture, spent seven days in Japan calling on everyone who had expressed even a remote interest in soft-shell crabs. "We listened, we really listened, to them for seven days to find out what the market potential was for soft-shell crabs in Japan," said DuPaul.

The next step was to find a discerning distributor who would be willing to promote the product. A major company servicing numerous hotels and restaurants, became the sole distributor for Handy brand soft-shell crabs in Japan. "We had some unique things going for us," reflects DuPaul, "we had a new product, a high quality product and a consistent supply of a product that could be served in a variety of Japanese menus - tempura and stir-fry for example." Using their own marketing and management techniques, the distributor launched an educational and promotional campaign for buyers dubbing the new product "Crab of the Moonless Night."

At the time of the trip there were some 30,000 dozen crabs from various U.S. markets in freezers in Japan. No one had been able to find an effective way to get them to the dining public. Brand name identity became an important part of the distributor's marketing campaign as the name Handy Soft Shell Crabs became associated with the new product.

Originally estimated to be a market for 100,000 dozen crabs a year, exports are now up to 300,000 dozen per year and the demand continues to increase. Market demands have been the driving force behind the growth and development in this industry. Being able to meet the year-round demand for frozen soft-shell crabs has solidified and stabilized the prices watermen receive. Established producers have expanded their production facilities, and new producers have been able to enter the market with less risk.

At the most recent Hong Kong trade show for hotels and restaurants, several Virginia seafood products were displayed. Bill DuPaul, representing the Gulf and South Atlantic States Fisheries Development Foundation and Jim Wallace of the New England Fisheries Development Foundation offered U.S. products for potential buyers.

This year, there was particular interest in sea scallops, Virginia's highest value fishery. Hong Kong presently is a large importer of sea scallops from Australia. The scallops are an expensive delicacy in many Hong Kong restaurants. Last year, the Colony imported 1.65 million pounds of sea scallops at a value of \$9.8 million in U.S. dollars.

According to DuPaul, "Market conditions and sea scallop supply present a timely opportunity for U.S. sea scallop producers to enter this market."

At this time, three of the largest importers are currently evaluating samples of sea scallops from Virginia.

Sea Grant provides the link between the industry and the university system to make certain accurate information reaches producers, processors and consumers. Their activities are interwoven with activities of various federal and state agencies as well as private foundations and industry representatives. The ultimate success of the industry and all those involved in it depends not only on continued effective marketing but also on continuing research to protect and not deplete this vast natural resource. It is a deep awareness and appreciation of this fact that has contributed to the cohesive spirit within the Virginia marine products industry.

Wanda Cohen is a free lance writer from Newport News whose work appears frequently in marine and maritime-related publications.

"Last year, ...we opened markets for the sale of \$2 million worth of Virginia soft shell crabs."

Governor Gerald Baliles speaking at the 18th Annual Conference on U.S.-Japan Agricultural Trade held in Richmond. (Quoted in the *Virginia Mariner*.)

"Crab of the Moonless Night"



Fish house kitchen

NUTRITION AWARENESS-CONSUMER ATTITUDES

Donna Soul
Extension Specialist
Seafood Utilization

In today's health conscious society seafood is a front runner! Over the past two years consumption has increased more than 9 percent, with the per capita consumption for 1986 above 15 pounds. More people are learning about the health benefits of eating more seafood. Much research has been done linking the special fat compounds (omega 3's) found in seafood to a reduced risk of coronary heart disease (the nation's number one killer).

The quest for a healthy diet has become an everyday concern for many of us. Many consumers are including more seafood in their diet for the health value and finding out they like it. Eating something 'because it's good for you' no longer has to mean that it won't taste good.

Nutritionally, seafood has a lot to offer. Most seafood is high in protein, low in fat and provides many essential vitamins and minerals. Since the research on omega 3 fish oils was published, consumers want to know what impact this will have on their well-being. The New England Journal of Medicine article stated that as little as two seafood meals per week significantly lowered the risk of heart attack among middle-aged men living in The Netherlands.

Today, a wider variety of seafood is available to consumers in a greater distribution area. Consumer education and better transportation have aided in the increased seafood consumptions. In addition, the switch back to full service seafood counters allows consumers to ask direct questions about the seafood on display.

With summer and picnic season upon us, it's time to make up some seafood salads. Most any seafood can be put in a salad and the salad can be as simple or as fancy as you like. Starting with a basic



tuna salad made with poached bluefish will really surprise your taste buds.

Fresh fish can be poached, deboned and flaked for the salad, or leftovers can become plan-overs and made into a tasty salad for lunches. Salads can be made with mayonnaise, oil and vinegar or sour cream; for a healthy alternative try plain yogurt. Most salads taste better chilled

than at room temperature. And contrary to popular belief, a mayonnaise-based salad is not prone to rapid spoilage. When properly refrigerated the acidity of mayonnaise may actually slow down the microbial spoilage.

Try one of these seafood salads as they are or substitute the stated seafood with your favorite species.

Bluefish Salad

2 cups cooked, flaked bluefish
1 cup chopped celery
1/2 cup chopped onion
1/2 cup chopped dill pickle
1/2 cup chopped black walnuts
1/2 cup mayonnaise or salad dressing
1 tablespoon lemon juice
1/2 teaspoon salt

Combine fish, celery, onion, pickle and walnuts. Mix together mayonnaise, lemon juice and salt. Add dressing to fish mixture. Toss lightly and chill. Serve on lettuce, with crackers, or in a wedged tomato.

NOTE: Fish may be cooked by poaching or steaming. Left-over baked or broiled fish may also be used.



Any Fish Salad*

- 1 lb lean fish fillets, or 1 1/2 lbs dressed fish, poached
- 1/2 cup green onions, chopped
- 1/2 cup celery, chopped
- 2 tablespoons pimento, chopped
- 5 oz package frozen peas, thawed
- 1/2 cup mayonnaise
- 2 teaspoons prepared mustard
- 2 teaspoons dry parsley
- 1/4 teaspoon each of dry mustard, curry powder, celery powder, paprika (or 1 teaspoon seafood seasoning)

*Try this recipe with your favorite fish, or bluefish, croaker, mackerel, black sea bass, spot, trout or whiting.

Prepare a basic poaching liquid in a 3-quart saucepan. Combine 1 onion (sliced), 1 celery rib (chopped), 1 carrot (chopped), 4 whole black peppers, 3 tablespoons lemon juice or white wine vinegar, 1 bay leaf, 1 teaspoon salt (optional), about 1/2 cup dry white wine (or water) and about 3 cups water (you will need enough water to just cover the fish pieces, more wine can be added to bring up the volume). Heat liquid to almost boiling and cook for about 30 minutes before adding fish. Reduce heat and add fish. Cover and simmer (do not boil) for 10-15 minutes. The meat will begin to separate when the fish is cooked - do not overcook. Drain and let fish cool. (The poaching liquid can be reused or it can be used to make a sauce.)

Meanwhile, mix the vegetables in a mixing bowl. In a separate bowl, blend mayonnaise, mustard, parsley and seasoning, thoroughly.

When fish has cooled, cut or break it into bite-size pieces. Combine fish, vegetables and mayonnaise mixture and stir carefully so as not to break fish flakes.

Serves 4 to 6.

Sea Scallops and Pasta Salad

- 1 1/2 lbs sea scallops
- 1 12 oz package colorful seashell pasta (beet, tomato, spinach and/or egg), cooked
- 1 cup frozen peas, thawed
- 1 cup cherry tomatoes, cut in half
- 1 small red onion, chopped
- 1/3 cup chopped, fresh parsley

Dressing

- 1/2 cup olive oil
- 1/4 cup red wine vinegar
- 2 tablespoons lemon juice
- 1 tablespoon basil
- 1/4 teaspoon salt
- 1/4 teaspoon garlic powder
- 1/4 teaspoon pepper

Sprinkle about 1 1/2 teaspoon each seafood seasoning and chives over scallops and stir thoroughly; then steam scallops, covered, over 1/2 cup boiling water and 1/4 cup vinegar. Scallops are done when they turn opaque white throughout.

Combine scallops, pasta, peas, tomatoes, onions and parsley in a large salad bowl, toss. Cover and refrigerate until ready to serve.

Dressing

Combine oil, vinegar, lemon juice, basil, salt, garlic and pepper in a shaker or a jar (with a tight-fitting lid); shake well. Pour dressing over salad immediately before serving.

Makes 6-8 servings.

MARINE NOTES (continued)

Private boat fishermen willing to assist the researchers can contact them at: Reef Fishing Study, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062 or call 804/642-7166; a message can be left on VIMS answering service after 5:00 pm (804/642-7000).

Artificial reefs are located in the Bay (off Gwynn's Island and Cape Charles) and offshore (Light Tower, Triangle Wrecks and two sites off Wachapreague). A diagrammatic chart of the sites and their Loran coordinates is available free upon request. A chart of wrecks and obstructions (fish havens) off Cape Henry, Virginia, is also available from the researchers at a cost of \$1.00 per copy.

Soft-Shelled Crab Symposium

Mike Oesterling, commercial fisheries specialist, has announced plans for the Second National Symposium on the soft-shelled blue crab fishery to be held at the Virginia Institute of Marine Science on November 4-5, 1987. The Symposium is being sponsored by the Sea Grant Mid-Atlantic Advisory Service Network, the Mid-Atlantic Fisheries Development Foundation and the Gulf and South Atlantic Fisheries Development Foundation.

According to Oesterling, soft-shelled crab sales in Virginia increased by over 100,000 dozen last year and an increasing number of new producers are entering the growing industry. The symposium will allow scientists, resource managers and shedders to exchange information. "Although the soft-shelled crab is just a blue crab that is molting," Oesterling says, "Its body-chemistry changes radically during the process. Whereas the hard-shelled blue crab is one of the hardiest of marine animals, during its soft-shelled stage it is easily traumatized." Modern producers try to maintain stable water temperatures, salinity and other conditions which increase the percentage of survival in the shedding tanks.

"Every season, shedders learn more and experiment with the shedding systems to increase productivity. And every year scientists learn more about this stage in the blue crab's life which when passed on to industry helps increase the productivity and quality of the soft-shelled crab," Oesterling said.

1986 Virginia Top Twenty Species By Pounds and Value*

lbs**	\$**
1. blue crab (1)	1. sea scallop (meats) (1)
2. menhaden (2)	2. blue crab (2)
3. surf clam (meats) (3)	3. market oyster (meats) (4)
4. market oyster (meats) (5)	4. surf clam (meats) (3)
5. sea scallop (meats) (6)	5. fluke (5)
6. fluke (4)	6. hard clam (meats) (7)
7. croaker (7)	7. menhaden (9)
8. grey sea trout (8)	8. grey sea trout (8)
9. spot (10)	9. sea bass (12)
10. bluefish (9)	10. spot (10)
11. catfish (13)	11. croaker (11)
12. Boston mackerel (12)	12. conchs (meats)
13. sea bass (17)	13. catfish (19)
14. hard clam (meats) (16)	14. anglerfish (tails) (13)
15. alewives (20)	15. lobster (-)
16. scup (-)	16. bluefish (14)
17. American shad (15)	17. scup (-)
18. conchs (meats) (-)	18. American shad (16)
19. gizzard shad (-)	19. American eel (18)
20. loligo squid (18)	20. loligo squid (19)

* does not include ocean quahog, menhaden purse seine or lobster pot landings

** 1985 ranking in parentheses

Source: Virginia Marine Resources Commission

1986 U.S. Commercial Landings - Top 10 States

	Thousand Pounds		Thousand Dollars
Louisiana	1,699,321	Alaska	752,417
Alaska	1,236,062	Louisiana	321,514
VIRGINIA	528,239	Texas	246,122
Mississippi	418,409	Massachusetts	243,524
California	386,740	Florida	154,501
Massachusetts	272,393	California	139,205
Washington	186,756	Washington	111,347
Maine	174,932	Maine	108,720
North Carolina	168,885	VIRGINIA	79,410
Florida	166,577	Rhode Island	75,089

Source: National Marine Fisheries Service.

REWARD

FOR TAGGED FLOUNDER \$2 to \$500

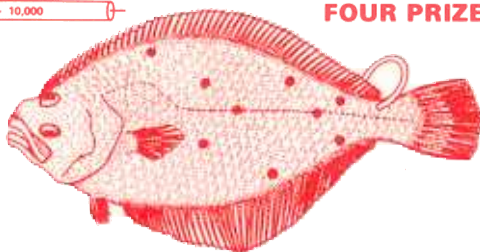
FLOUNDER ARE BEING TAGGED BY THE VIRGINIA INSTITUTE OF MARINE SCIENCE WITH LOOPED INTERNATIONAL ORANGE PLASTIC TAGS TO OBTAIN INFORMATION ON MORTALITY, MIGRATION AND DISTRIBUTION.

PERSONS RETURNING TAGS WILL RECEIVE \$2.00 FOR EACH TAG. IN ADDITION, EACH RETURNED TAG WILL BE INCLUDED IN THE ANNUAL FALL DRAWING FOR PRIZES. THE FOLLOWING AMOUNTS WILL BE AWARDED IN 1987 AND 1988:

TAG



ONE PRIZE AT \$500.00
TWO PRIZES AT \$100.00
FOUR PRIZES AT \$50.00



PLEASE RETURN TAGS TO THE ADDRESS BELOW AND INCLUDE THE FOLLOWING INFORMATION:

VIRGINIA INSTITUTE OF MARINE SCIENCE
SUMMER FLOUNDER TAGGING PROGRAM
Gloucester Point, Virginia 23062

Tag Number _____
Name _____
Address _____
City _____ State _____ Zip _____
Place Caught (water body and nearest landmark) _____
Date of Capture _____
Gear Used in Capture _____
Length of Fish _____

YOUR ASSISTANCE IN RETURNING TAGS WITH THE ABOVE INFORMATION WILL BE GREATLY APPRECIATED. ALL PERSONS RETURNING TAGS WILL RECEIVE THE TWO DOLLAR REWARD AND INFORMATION ON WHEN AND WHERE THE FISH WAS TAGGED AS WELL AS BEING ENTERED IN THE DRAWING.

FOR MORE INFORMATION CALL:

1-804-642-7309

8:00 A.M.-4:30 P.M. - MONDAY-FRIDAY

The Fisheries Department of the Virginia Institute of Marine Science has been awarded funding to conduct a tagging study on summer flounder in Chesapeake Bay and seaside Eastern Shore of Virginia. The study is supported by Wallop-Breaux funds administered through the U.S. Fish and Wildlife Service and the Virginia Marine Resources Commission.

The objectives of the study are as follows:

1. To determine the stock composition of inshore populations of summer flounder in Virginia and North Carolina

through tagging.

2. To determine the seasonal migratory patterns of these populations.

3. If different stocks are present, to estimate the relative contribution of each stock to the total landings in Virginia.

4. To better define age-growth and size at maturity of the inshore (southern) flounder stock.

5. To make findings available to the Mid-Atlantic Fisheries Council so that they may be incorporated into future revisions of the Fisheries Management Plan for summer flounder.

6. To determine how projected

changes in the minimum legal size of flounder (12" presently) may affect the flounder population and the fisheries in Virginia.

The VIMS Fisheries Department plans to tag and release about 10,000 summer flounder from the lower Chesapeake Bay and seaside Eastern Shore during the summers of 1987 and 1988. A reward of \$2.00 is offered for each returned tag with special rewards up to \$500.00 being determined by a drawing to be held each year.

**Fall Issue: The role of scientific research
in marine resource management.**

- **Management success—Virginia's wetlands**
- **Striped bass—how little we know**
- **Microplankton—key to the Bay's Health**

**Sea Grant Communications
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062**

Address correction requested

NON PROFIT
ORGANIZATION
U. S. POSTAGE PAID
Gloucester Point, VA.
PERMIT NO. 6