

Marine Resource Bulletin

A Sea Grant Advisory Service

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1979 VIMS FISHING FORECAST



Winter trawl surveys of rivers emptying into lower Chesapeake Bay, added to catch data from sport and commercial fishermen, help VIMS scientists predict fishing success for the coming season. Summer and fall sampling programs and beach seining afford other inputs.

EVERY YEAR ABOUT THIS TIME a report on Virginia's commercially and recreationally important marine fish is compiled at the Virginia Institute of Marine Science (VIMS). Information for this report, assembled by assistant marine scientist Frank J. Wojcik of the Division of Fish-

eries Science and Services, comes in from various sources.

First and foremost are the summer and winter trawl surveys of the rivers which empty into Chesapeake Bay from the Potomac southward. Using specially rigged research vessels, fisheries scientists

record the number and species of marine animals netted. Additionally, monthly surveys are conducted April through November in the middle stretches (mile 10 - mile 35) of rivers in the lower Bay.

Trend data collected from interviews with commercial fishermen, summer and fall sampling programs in the freshwater portions of rivers in nursery areas, summer beach sampling in the James River, screen and trawl data from the Virginia Electric and Power Company and reports from the sportfishing clubs round out the effort. The results, following, will give the reader a fairly accurate picture of fishing this season in Virginia's marine waters.

CHESAPEAKE BAY COMMERCIAL AND SPORT FISH

AMERICAN EEL -- This species should remain at a reasonably constant level for the next few years. The foreign market is good: Eels are in demand in Europe and Southeast Asia. The largest eel processing plant on the East Coast (at Mount Holly, Virginia) annually processes about 1.5 million lbs., with most coming from Virginia waters.

AMERICAN SHAD -- Commercial catches are expected to be larger than they were in the mid 70's, but smaller than in the late 60's.

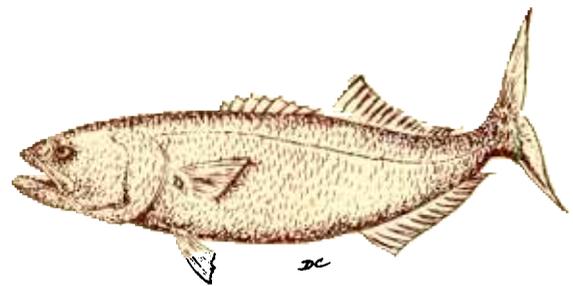
CROAKER -- Croaker populations should fall to low levels in the 1979 fishing season. Low catches are believed due to the three consecutive severe winters in Virginia's coastal area. VIMS trawl surveys indicate virtually a complete kill of the 1976 year class in January 1977, followed by an estimated 75% mortality of the 1977 year class in the winter of 1978. The croaker catch made during the summer and fall of 1979 likely will be at a low level, with a few large fish up to 5 lbs. and a few small fish in the ¼ to ½ lb. size.

ATLANTIC MENHADEN -- The 1979 catch should remain close to the average for the last 10 years. The National Marine Fisheries Services (NMFS) predicts the Atlantic Coast catch will run about 326,000 metric tons, but it could vary between 235,000 and 417,000 metric tons.

ATLANTIC SPADEFISH -- This species is at the northern limits of its range in Virginia waters. While not sought by many anglers, spadefish are prized by those who know where and how to catch them. They may be taken in late summer near buoys in Chesapeake Bay.

BLACK DRUM -- Abundance of large fish should remain constant this spring. A slight increase appears likely next year, based on the catch of

1 to 3 lb. fish taken by beach seines this past winter in North Carolina. A note of interest is that party boat operators along Virginia's Eastern Shore set a self-imposed daily boat limit on black drum last year, a measure aimed at reducing waste.



BLUEFISH -- Bluefish are still being taken in good numbers in the trawl surveys, but are trending somewhat downward. Adequate sampling cannot be achieved by this method since young bluefish inhabit shoal and midwater areas, where trawling is not possible. The long, warm fall and early winter are believed to have reduced the catch of large fish below expectations of 1978. This was especially true along North Carolina's Outer Banks. Normally, large blues are found in sizable schools at Cape Hatteras Point by November 1. During the fall of 1978 they didn't appear at the Point until December 1, and then came into the surf for only a short time. Catches of small as well as large blues (10 lbs. and over) should be made again this spring and fall.

CHANNEL CATFISH -- Fishing should remain good for this species, found in tidal portions of most Virginia rivers.

COBIA -- Many small fish are being taken from fishing piers, but this species' numbers are too variable for an accurate prediction.

COWNOSE RAY -- Should be quite abundant. More anglers should try to catch as well as eat this highly edible species of ray.

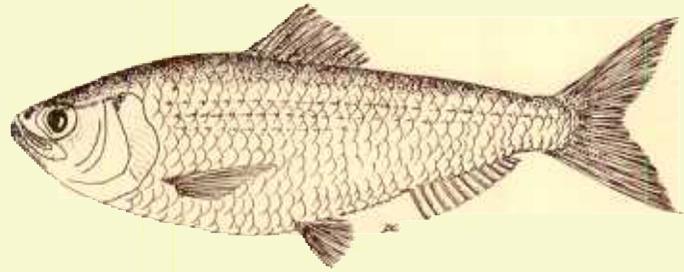
NORTHERN PUFFER -- Locally known as "sugar toad" in some areas, this species' population is at a very low level. Juvenile puffers have not been seen for at least two years.

RED DRUM -- Large numbers of red drum (channel bass) were reported last fall from the piers on the Outer Banks of North Carolina. Many large fish were caught. The expected run of small puppy drum last fall did not appear, but a good catch was made on larger puppy drum up to 25 lbs. Based on this information, the catch of large channel bass should remain high, but the catch of small fish will probably be below average in 1979. Good fishing for this species should continue for the next couple of years.

THE FISH HOUSE KITCHEN

THE RIVER HERRING

River herring (alewife, blueback) are anadromous fish that ascend Virginia's rivers each spring on their spawning run. Although commercial fishing for river herring has declined in recent years, sport fishermen still take large numbers with dip nets from small feeder streams. Large quantities of river herring are salted and pickled for later consumption, and the roe is delicious when fried or used as a substitute for shad roe in recipes. Here are a few to try, if you haven't already done so.



HERRING CAKES (Sill Bullar)

1 salt herring
5 or 6 medium-sized potatoes, cooked

1 egg, beaten
Flour and butter

Soak herring in water overnight. Remove skin and bones and chop fine. Mash the cooked potatoes and mix well with the herring. Add the beaten egg. Shape into cakes, roll in flour and fry in butter. Serve hot with currant sauce.

CURRANT SAUCE

3 T. dry currants
3 c. water
1 T. butter

2 T. flour
1 T. vinegar
Sugar and salt to taste

Wash and clean currants and cook in water until soft. Make a sauce of the flour, butter and currant water. Cook for 10 minutes. Add vinegar, salt and sugar. Serves 6.

PICKLED HERRING

2 salt herring
1 large onion, thinly sliced
1 c. cider vinegar

1 c. water
1 T. allspice berries
1 large bay leaf

Soak in cold water for 3 hours the herring which has been cleaned and cut into fillets. Drain herring and cut into 2-inch square pieces. Put a layer of herring into a shallow bowl and top with some of the onion rings. Repeat layers of herring and onions. Mix together the vinegar and water with spices. Pour this over the herring and onion. Chill thoroughly several hours or overnight to blend flavors. A "must" for the smorgasbord.

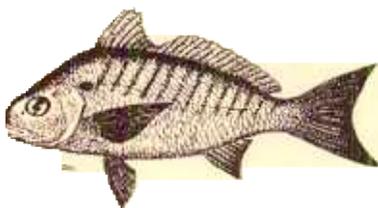
CREAM OF HERRING SOUP (Russian Style)

2 c. milk
2 c. water
Salt and pepper to taste

2 herring (previously soaked)
1 small onion

Place milk, water, onion and seasoning in a saucepan. Boil for 10 minutes, add herring cut in small pieces; cook until herring pieces are tender.

RIVER HERRING -- (Lumped to include Blueback, Alewife, Glut Herring and Hickory Shad). Stocks are still below what they were in the late 60's and early 70's. However, the 1978 commercial catch exceeded that of 1977, and catches may improve again this year.



SPOT -- Very large numbers of this species were again taken in Virginia waters during the 1978

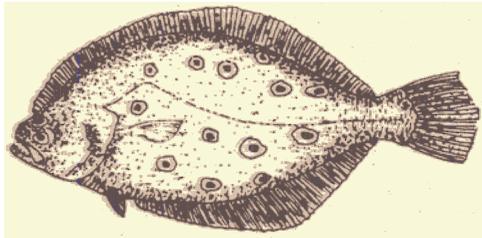
summer survey. As usual, spot appeared to be most numerous in the Rappahannock River. Excellent catches of all sizes should be made this season.

SPOTTED SEATROUT -- Many large fish are now being taken in Virginia. Although never abundant, this species is avidly sought by a select group of sport fishermen. They are taken most frequently on the bayside of the Eastern Shore. Regular catches are also made in the Piankatank River, and the Hole-in-Wall area near Gwynn's Island produced good catches in late spring and early summer.

STRIPED BASS -- There will be a further reduction in the numbers of catchable striped bass

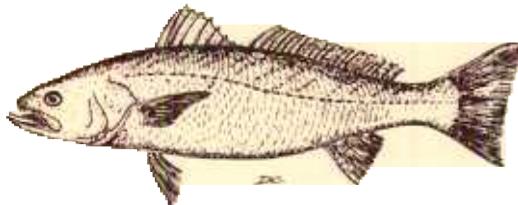
this year. The 1978 surveys showed another decrease in apparent survival of juvenile striped bass in Virginia waters. Hope for the future lies in what appears to be an adequate spawning stock which still exists in Chesapeake Bay as evidenced by slight increases in gill net catches last fall.

STRIPED MULLET -- This fish should be abundant in Virginia waters in late summer when they are sought by gill netters.



SUMMER FLOUNDER -- Fishing for this species should improve slightly. Very good catches are likely early this summer as the fish migrating northward enter Virginia rivers. Large trawler catches of flounder were reported from North Carolina waters this winter.

TARPON -- Not common except on the seaside of the Eastern Shore.



WEAKFISH -- Good catches of weakfish (grey trout) should continue this season. A large number of both small and large fish were taken last summer and fall.

WHITE CATFISH -- This species is found in tidal portions of most coastal Virginia rivers. Supply still exceeds demand.

WHITE PERCH -- Fishing should improve for this fish, also known as "stiff back perch." Good catches of juveniles were made in the James, and the deep water in the York from the Bell Rock area up to West Point contained large numbers this winter. Although not the most select fish in the minds of Virginia's anglers and consumers, the white perch is a widely sought species in more northern states.

SEA GRANT PUBLICATIONS AVAILABLE

Offshore Pipeline Corridors and Landfalls in Coastal Virginia, Vol. I and II -- Ann Hayward Rooney-Char and Ronald P. Ayres. *Special Report*, \$ 5.00 for both volumes.

Guide to the Marine Education Materials System (MEMS) -- Susan C. Gammisch and James A. Lanier. *Book*, \$ 5.00.

Tidal Wetland Plants of Virginia -- Gene Silberhorn. *Booklet*, \$ 3.00.

Sensing the Sea -- Ellen Odell-Fisher and Ronald N. Giese. *Curriculum Guides, Grades K - One and Two - Three*, \$ 2.00 each.

Biology and Identification of Rays in the Chesapeake Bay -- Joseph W. Smith and J. V. Merriner, Ph.D. *Booklet*, 50 cents.

Advisory No. 15, A New Roe Knife. *Paper*, Free.

The VIMS Sea Grant Marine Education Program. *Booklet*, Free.

Spring Resource -- The American Shad. *Leaflet*, Free.

Summer Bounty -- The Bluefish. *Leaflet*, Free.

Summer Treat -- The Spot. *Leaflet*, Free.

Offshore Delight -- The Black Seabass. *Leaflet*, Free.

The above publications can be order from the Sea Grant Communications Office, Virginia Institute of Marine Science, Gloucester Point, VA 23062.



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William J. Hargis, Jr.
Director

Wavelets

TIDAL WETLANDS -- PART II, BRACKISH MARSHES

by GENE SILBERHORN



IN THE LAST EDITION of WAVELETS we examined the marshes that exist very near the ocean, where the water is very salty. In this issue, we will be exploring *brackish marshes*, those wetland areas that depend on a mixture of fresh and salt water. Brackish marshes are found along the shorelines of *estuaries*, bays, tidal rivers and creeks. An estuary is a large body of water that occurs in the coastal region and is open to the ocean but also receives fresh water from rivers and streams. Chesapeake Bay is a good example of an estuary. In fact, it is one of the largest estuaries in the world.



Brackish marshes usually have a large number of different kinds of plants and animals living in them. Because the salt content or *salinity* of the water is lower here than in salt marshes, more different kinds of organisms can live. Saltmarsh Cordgrass, the dominant plant in salt marshes, is common in brackish marshes as well, but it shares the habitat with other species.



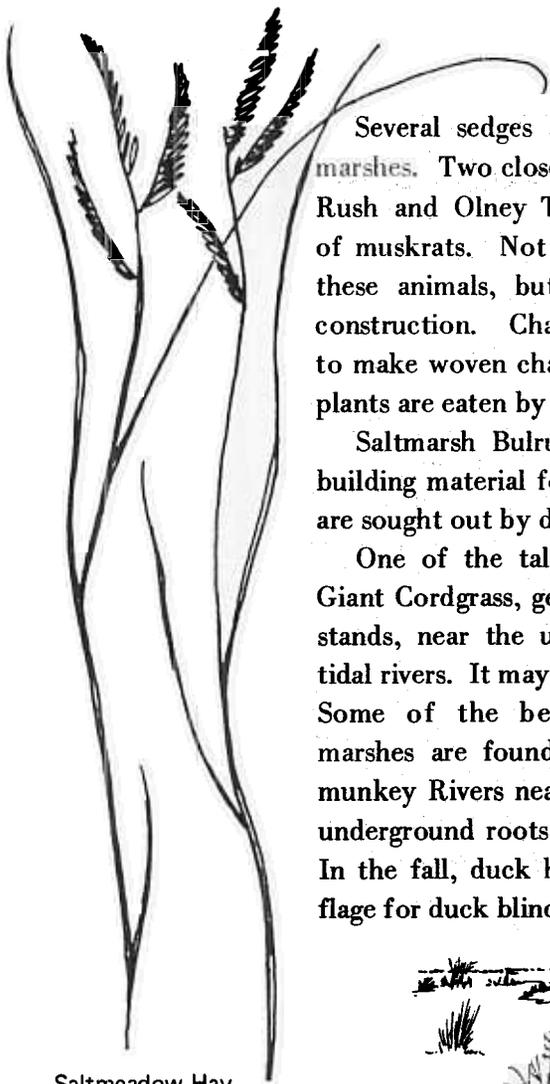
Short, wiry grasses make up the "meadows" that are abundant in brackish marshes. These dense grasslands are like a thick, springy carpet that varies from ankle to knee high. The meadows usually are found above the high tide mark, but are often flooded by storm waters and spring tides. Two species are common in the meadows. These are Saltmeadow Hay and Salt Grass. In the past, marsh meadows were often grazed by cattle. This is how Saltmeadow Hay got its name. Even now, this grass is harvested and baled as cattle feed in certain areas along the New Jersey coast and elsewhere. Salt Grass, which is more likely to be found in lower, saltier areas of the marsh, is not as good to eat as Saltmeadow Hay.



Black Needlerush, a tall, grass-like plant, is also found in brackish marshes. It is easy to pick out because it is taller (up to 6 feet tall) than the meadow grasses and a much darker green. Needlerush grows in thick stands, and each plant has a very sharp tip that can pierce the skin. Because Black Needlerush stands are so thick and have such stiff, sharp points, many animals (including humans) avoid walking through them. A walk into the marsh will reveal that animal paths avoid colonies of this plant.



One of the most usual plants of brackish marshes, salt flats and dry, sandy areas in saltmarshes are the Saltworts and Glassworts. These plants have no leaves and the thick, fleshy stems are jade green in color, often turning pink or red in the fall. The stems can be pickled and preserved, and are considered a delicacy by those who eat wild foods.

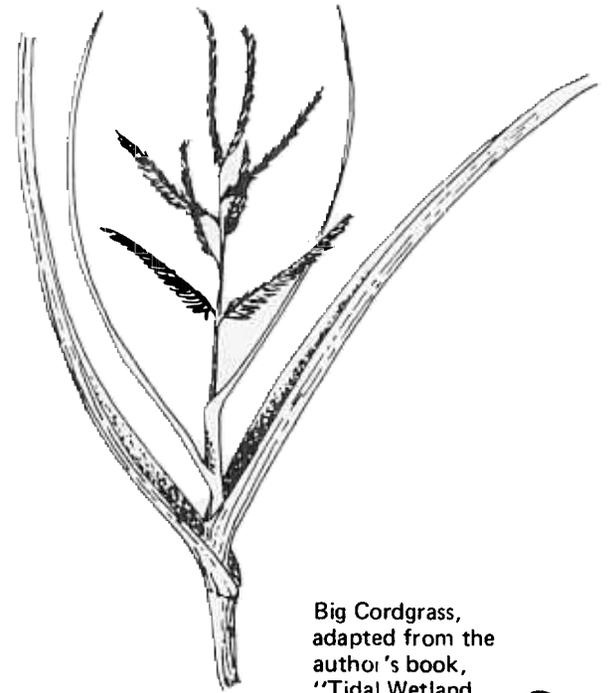


Saltmeadow Hay

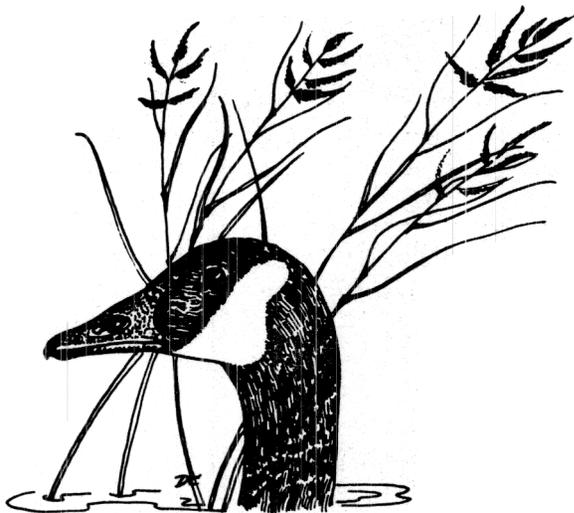
Several sedges are often plentiful in brackish marshes. Two closely related species, Chairmaker's Rush and Olney Threesquares are favorite plants of muskrats. Not only are these plants eaten by these animals, but they are also used in lodge construction. Chairmaker's Rush was once used to make woven chair seats. The seeds of these two plants are eaten by ducks and geese.

Saltmarsh Bulrush is also a favorite food and building material for muskrats, and the seed heads are sought out by ducks and geese.

One of the tallest grasses of tidal marshes is Giant Cordgrass, generally found growing in dense stands, near the upper reaches of estuaries or in tidal rivers. It may reach 14 feet or more in height. Some of the best developed Giant Cordgrass marshes are found along the Mattaponi and Pamunkey Rivers near West Point. Geese dig up the underground roots and stems of this grass for food. In the fall, duck hunters like to use it as camouflage for duck blinds.

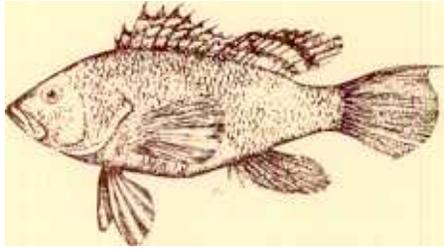


Big Cordgrass, adapted from the author's book, "Tidal Wetland Plants of Virginia."



Two of the few brightly flowering plants in brackish marshes are Sea Lavender and Sea-oxeye. Sea Lavender has thick, leathery, dark green leaves near the ground and a flowering head of many, tiny lavender or blue blooms. Sea-oxeye is a tiny shrub that displays a relatively large, daisy-like, bright yellow flower head. These attractive, showy plants are seldom seen in great numbers.

In the last WAVELETS article (No. 5), we learned that salt marshes were a major contributor to the estuarine or marine food web. Brackish marshes function in the same way, and therefore are very valuable natural resources. In the next issue of WAVELETS we will finish this series on wetlands with a discussion on freshwater marshes and swamps.



BLACK SEA BASS -- There should be a slight rise in the sea bass population during the winter of 1979-80 because of the reduction of foreign fishing pressure. This increase may not occur, however, if a sharp rise in the pot fishery for this species is enough to offset such an increase. It may take several years before changes in the population level are large enough to be apparent.

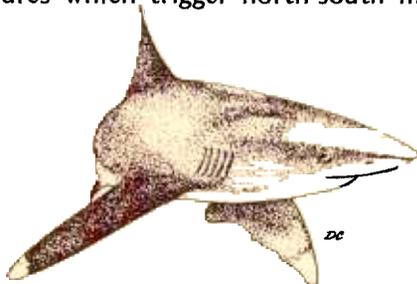
TAUTOG -- Although tautog are found in Virginia waters year round to some extent, they are not well known to the average angler. The best fishing occurs around offshore wrecks, reefs and in the rip-rap around lighthouses in the spring and fall. At these times, fishing pressure is comparatively light. Tautog are a cold water fish, and the bulk of the population moves north during summer, waiting for dropping fall temperatures to move them south again. Popularity of the tautog as a sport fish is rapidly increasing as anglers learn of its fighting ability and value as a food fish.

OFFSHORE PELAGIC FISH

AMBERJACK -- Abundance in Virginia offshore waters is affected more by temperature than other causes. The warmer the summer, the more abundant this subtropical species becomes.

ATLANTIC MACKEREL -- Populations are reported at a low level, even in New England waters. This fish should be returning to Virginia waters as temperatures rise this spring. Exclusion of foreign fishing off the mid-Atlantic and New England coast should favorably affect their recovery.

KING MACKEREL -- Kings are abundant offshore and at some of the fishing piers. Spring and fall peak catches are attributed to water temperatures which trigger north-south migrations.



SHARKS -- Sharks are an abundant and under-utilized fishery resource in Virginia. Spiny dogfish represent a potentially valuable resource for the trawl fishery. Several species are being sought by sportfishermen, especially the organized shark fishing clubs. Among these, in order of abundance, are the sandbar, dusky, sand tiger, tiger, sharpnose, scalloped hammerhead, mako and blacktip.

SPANISH MACKEREL -- The large scale oceanic gillnet fishery working on this species along the Florida coast is reported to have reduced population levels.

SWORDFISH -- Although this species has been known to occur at various times off Virginia's shore, it appears to migrate both inshore and offshore, north and south. Swordfish prefer to stay in 53 - 56 F. water just below the thermocline in summer, in the vicinity of schools of juvenile butterfish. A new sport fishery has developed in Virginia for this species, but because of its movements, abundance is unknown. In recent years swordfish have been taken off Virginia by longlines. Sportfishing is done at night from boats drifting natural bait on leaders rigged with chemically activated "glow sticks."

TUNA -- Some small tuna were reported taken during the 1978 season for the first time in several years. A recent booklet on tuna identification is now available to fishermen from National Marine Fisheries Service.

WAHOO -- This is a tropical species whose abundance is not too well known. Its movements are too greatly influenced by water temperatures to be predictable.



The spot, Number One panfish in Virginia's marine waters, should be in plentiful supply again this season.

PROGRAM FOR HANDICAPPED

A marine science program for outstanding physically handicapped precollege students will be held June 21 - July 27 on Virginia's Eastern Shore. Conducted by the Marine Science Consortium, the program is aimed at exposing gifted high school seniors to field and lab experiences in the marine sciences. All types and degrees of handicap severity are eligible for the program.

Headquarters will be at the Consortium's Wallops Island Station near Chincoteague and Assateague Island National Seashore Park. Students will be housed on campus, with room, board and station fee charges totaling \$ 470. Travel costs to and from the program are not included. Assistance funds on a "financial need" basis are available through the National Science Foundation.

For applications and additional details contact E. C. Keller, Jr., 237 Brooks Hall, West Virginia University, Morgantown, WV 26506; Tel. (304) 293-4380. Deadline for receipt of applications is May 15, 1979.

MARINA CONFERENCE

At a recent conference on Marina Design and Environmental Impact held in Alexandria, Virginia, a broad cross-section of coastal interests from New York to Georgia discussed the present and future status of marinas. Sponsors were VIMS Sea Grant Marine Advisory Services and the Coastal Plains Center for Marine Development Services.

A major benefit of the conference was the promising outlook for improvements in public access and boating facilities development in states where coastal zone management (CZM) programs have or will be implemented. In addressing the subject "Where Do Marinas Fit Under CZM" Dallas Miner, Office of Coastal Zone Management, said that recreational use of the shoreline is both a major industry and the most visible public benefit aspect of shoreline use. He added that state CZM programs are focusing increasing attention on the need for additional boating facilities. No conference proceedings are planned.

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