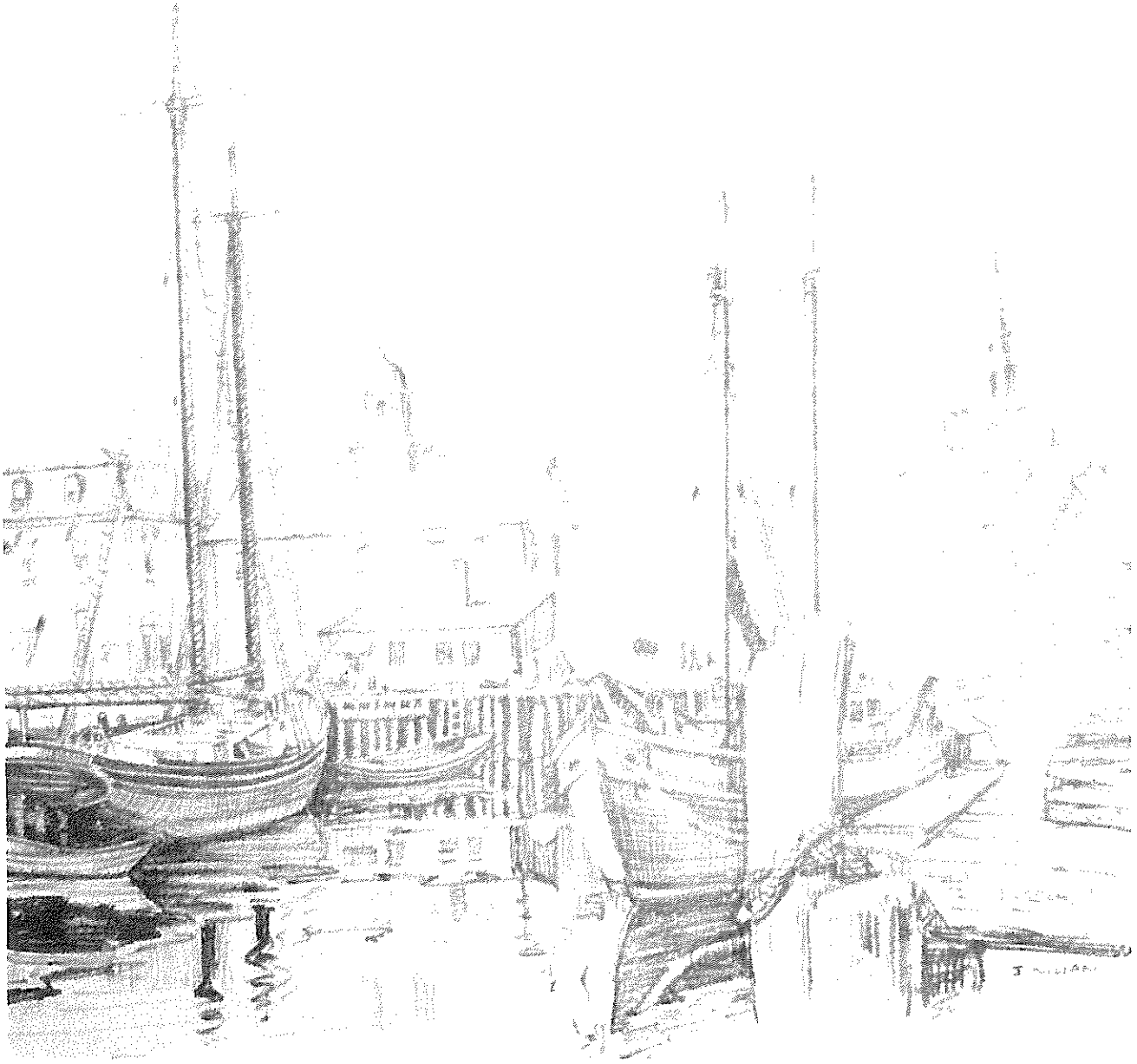
September-October, 1979 Volume 2, No. 3

Coastlines Georgia



Cover Illustration By J. Killian From The Anderson Library Collection.

COASTLINES GEORGIA is published by the Coastal Resources Division, Department of Natural Resources, 1200 Glynn Avenue, Brunswick, Georgia 31520.

Dr. Robert J. Reimold, Director

Bill Morehead, Editor **Steve Olsson, Editor**

5,000 copies printed at a cost of approximately $1,875.00

Song Of The Swan

by Bill Morehead

This is my last issue as editor of COASTLINES GEORGIA. I'm staying on St. Simons Island to write a couple of books, magazine articles and my weekly columns in the *Atlanta Journal.* As Howell Raines, *New York Times* Bureau Chief in Atlanta said, "I thought you were getting ready to do something crazy." I was and I did.

But COASTLINES GEORGIA will continue -- and very likely get better. Back when we were first thinking about it, Bob Reimold and several of us decided to produce a publication which had (1) some **news** in it and which was a (2) "letter," meaning hogswaggle jargon was eliminated and replaced by good, simple English.

In light of present-day government publishing, COASTLINES GEORGIA is a radical, almost revolutionary item. It facilitates nothing, modules nothing and impacts nothing. As a matter of fact, this is the first time that "facilitates", "modules" and "impacts" have ever appeared in COASTLINES GEORGIA. And I hope the last.

The average citizen can read COASTLINES GEORGIA and understand what it says. That is not surprising, but when we found out that bureaucrats can also read and understand it we were both astounded and pleased. So were they.

The coast of Georgia is on the move. Its commercial and sport fishing are coming of age, its seaports and other resources are becoming better known and used.

The natural environment of Georgia's coast is in pretty good shape for 1979, especially as compared to those of neighbor states.

COASTLINES GEORGIA is a newsletter worth reading because some state employees are committed to make it worth reading.

And the coast of Georgia is a darn nice place to live.

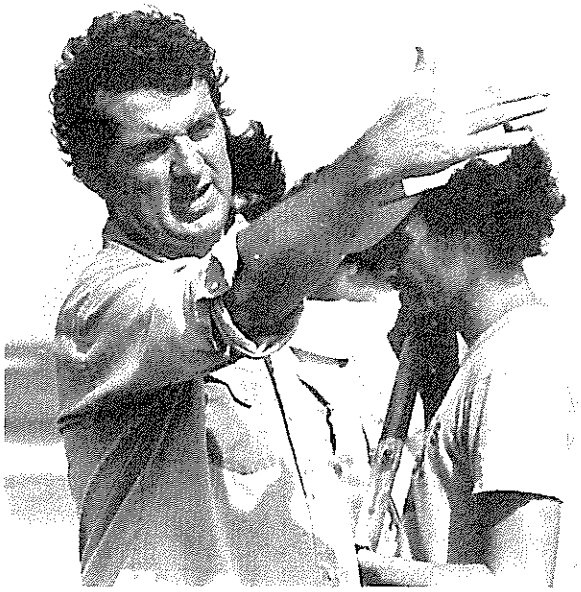
Feds Get Their Feet Wet

by Jenny Phillips

The marshes, swamps, and beaches of Glynn County served as field laboratories for a workshop sponsored recently by the U.S. Army Corps of Engineers. Participants in the session came from all over the United States, and are employed either by the Corps of Engineers or the U.S. Fish and Wildlife Service. The course, offered by Coastal Resources Division, Department of Natural Resources, was held at Brunswick's Ramada Inn, September 10-14.

Funds for the workshop were provided by the Corps of Engineers. The training was designed to familiarize attendees with the workings of various wetland ecosystems and prepare agency personnel to make informed decisions about the wise use of wetland resources. Corps of Engineers and Fish and Wildlife people face increasing numbers of regulations and legal issues in granting permits for activity in our nation's wetland areas.

FISHY, FISHY IN A BROOK--CRD Biologists Jerry Knowlton and Susan Shipman (kneeling, foreground) display the results of their creek-seining effort for workshop participants. An essential part of understanding the marsh involves learning about the creatures brought in by the tides to feed there.



INFORMAL SURVEY--Coastal Protection Chief Fred Marland relates the effect that recent storms have wrought on Sea Island's beach. Participants viewed erosion patterns and discussed various efforts to counteract them.

Morning sessions were geared around lectures, bringing participants up to date regarding types of wetlands, vegetation patterns, methods of assessing plant productivity, and legislation affecting Corps' permit procedures. At the close of each morning discussion, participants left their plant-strewn classroom, donned field clothes and traveled to nearby representative wetland areas. The study sites included a fresh water swamp, marsh and beach environments on Sea Island, and a dredged material disposal area in Buttermilk Sound that was replanted with salt marsh vegetation.

Instruction for the course was provided by

experts from the Corps of Engineers, Environmental Protection Agency, Department of Natural Resources, and several universities.

DAVID'S HANDIWORK--Field study at Sea Island beach included inspection of damage caused by Hurricane David's progress up the Georgia coast. Eroded beach expanse and a very high tide necessitated a long wade for all the participants from Pelican Spit south to 36th Street.

Hunting On Ossabaw

For the first time ever, deer hunters will have a chance to test their prowess on Georgia's Ossabaw Island. The island will be the site of three organized hunts during November, December, 1979, and January, 1980.

Ossabaw, which consists of approximately 12,000 upland acres, supports a deer population of close to 4,000 deer. About 5,000 acres of wildlife area at the south end of Ossabaw will be the site of the three hunts. Participants in the hunt have been chosen by a computerized random lottery selecting 75 applicants per hunt. Hunting dates are as follows:

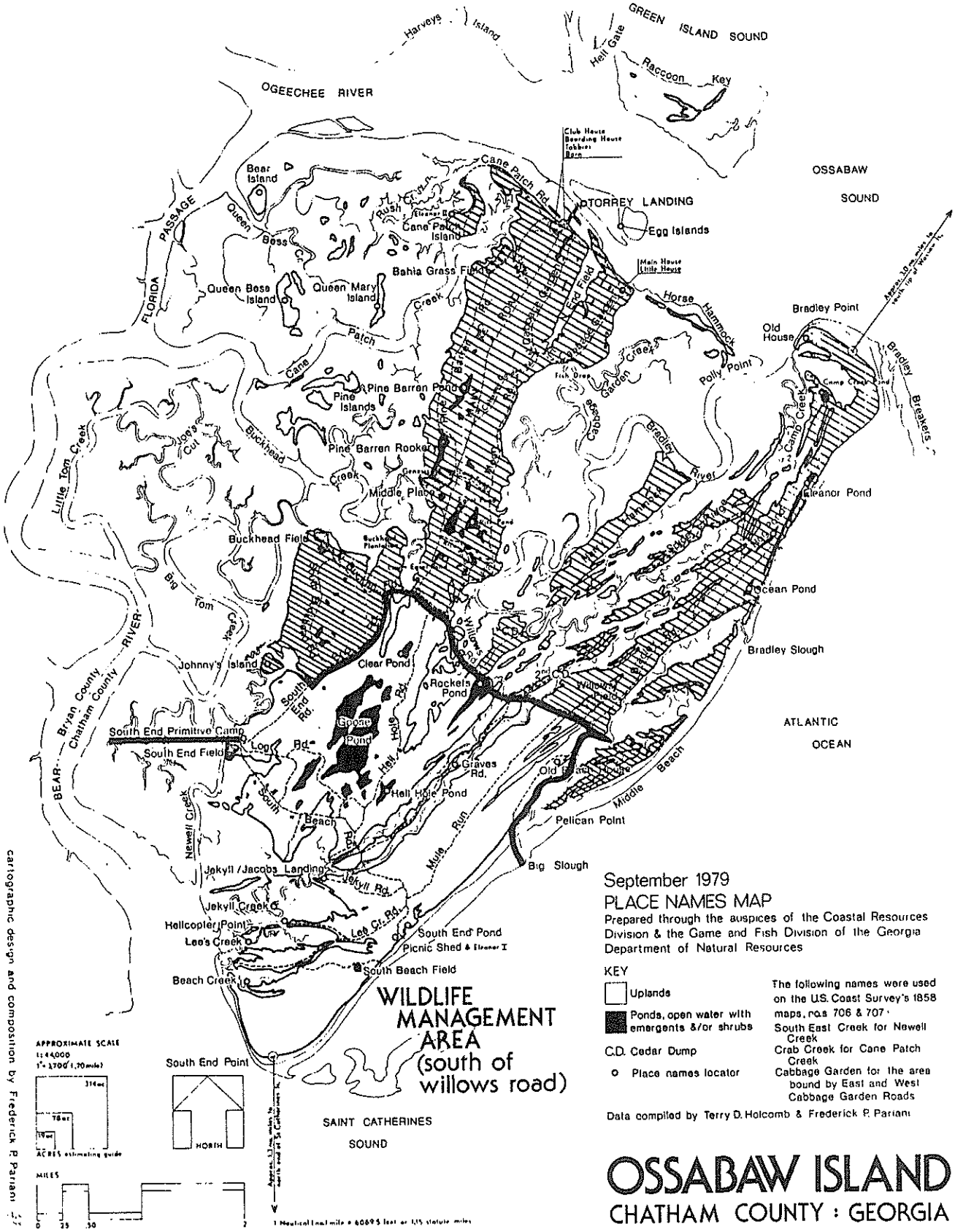
November 22-24, Firearms, Either Sex, Parent-Child Hunt.

December 20-22, Firearms, Either Sex, Parent-Child Hunt.

January 3-5, Firearms, Either Sex, Adult Hunt.

The adjoining map of Ossabaw is a result of the joint efforts of the Coastal Resources Coastal Protection Staff and the Ossabaw Game and Fish personnel. It is a preliminary map in the ongoing resource mapping project for the island and highlights the location of various island roads, creeks, ponds, fields and landings.

(Map shown on Page 5)



MAP OF OSSABAW ISLAND: HATCHED REGIONS INDICATE NON-HUNTING AREAS.

Researcher Roy Robertson demonstrates video camera used in observing feeding habits for fiddler crabs.

Sapelo Research

by Barbara Kinsey

The University of Georgia Marine Institute is situated on the southern end of Sapelo Island, in the heart of the Sapelo Island National Estuarine Sanctuary.

The Marine Institute is funded jointly by the Sapelo Island Research Foundation, by the State of Georgia, and by various Federal grants. It operates within the Marine Sciences Program of the University of Georgia.

The Institute has a variety of roles. As an institute it has its own faculty, all post-doctoral, whose interests are the salt marsh, beach and nearshore waters as influenced by the salt marsh/estuarine system. It provides graduate students and campus based faculty with an opportunity to work on ecologically oriented problems on an extended basis, while undergraduates, graduate students and faculty from a variety of colleges make field trips to the facility thorughout the year. During the summer visiting scientists also take up residence, to either initiate new research or, in many cases, to continue their ongoing research which has been carried out over the year by the technical staff employed under their grants.

Evelyn Haines' work is the basis for much of the salt marsh and estuarine food web studies. The element carbon occurs as two major atoms of differing atomic weights (called isotopes), which are found in fixed proportions to each other. However, in the conversion of atmospheric carbon dioxide to plant carbon which occurs during photosynthesis, a shift in the relative proportions of these isotopes occurs. This provides a "fingerprint" pointing to those animals which feed on specific plants, because they will maintain that relative

proportion of carbon isotopes within their tissues. These interrelationships are more complex than originally thought.

David Whitney's work relates to the algae which grow on the surface of the mud. These are microscopic, visible only as a golden-green sheen on the exposed mud, but their activity is proportionally very important. Compared to cordgrass (which is rarely a direct food source), algae are responsible for one-fouth of the amount of the atmospheric carbon dioxide converted to plant carbon compounds in the salt marsh, and form the principal food of fiddler crabs.

Roy Robertson investigates the feeding behavior of fiddler crabs, how they detect food and how they behave within the group when conditions are extreme. They are extremely efficient at removing the algae from the mud, leaving in their wake only one-tenth of the original number of algae.

Keith Bancroft uses ATP/ADP ratios (i.e. the minute amounts of instantly available energy found within organisms) to provide information on the growth rates of microbes in the marsh soils. Keith and Roy together have shown that, based on these minute energy figures and chlorophyll (the green pigment present in all plants) figures, crabs prefer a diet of microscopic algae and that the algae remaining after they have eaten grow more vigorously.

Steve Newell is a comparatively new arrival, whose interest is the fungal breakdown of above-ground cordgrass litter and the relative roles of both fungi and bacteria in this process.

Alice Chalmers has recently completed a study of nitrification in the surface layer of marsh mud. Nitrification is the microbial change from ammonia to nitrites and nitrates which are then available for use by salt marsh plants and nitrogen-poor estuarine phytoplankton. Alice will be working with Dick Wiegert to fill some gaps in understanding the salt marsh system, such as the effect of heavy rain on the system, cordgrass wrack movement and the breakdown by microorganisms of detritus (the disintegration products of marsh plants).

Charles Hopkinson arrived in July from Louisiana State University. His background is coastal ecology and mathematical modelling and he will apply this to energy, carbon and nitrogen cycling in the salt marsh and estuarine waters.

Mention should be made of the initiation of a program of summer graduate assistantships, for research projects to be carried out with Marine Institute faculty. The recipients of the awards were Randall Hicks (Dr. Newell), William Sage (Dr. Whitney), and Elizabeth Vetter (Dr. Robertson). This provided an increased opportunity for faculty to work with students and for students to participate in their own research under the tutelage of an experienced field investigator.

This is a very brief resume of the resident faculty's work. There are many cooperative efforts between University of Georgia Marine Institute faculty and other scientists which have not been mentioned owing to lack of space, and for this I apologize.

Gould Elected Chairman Of S.A.M.F.C.

Coastal Resources State and Federal Coordinator David H. G. Gould was recently elected Chairman of the South Atlantic Fisheries Management Council. The Council is responsible for developing, monitoring and revising management plans for fish stocks within the 200 mile limit of the Atlantic off the coasts of Georgia, Florida, South Carolina, and North Carolina. Gould has served as a member of the council since its inception in 1976 and was elected unanimously as Chairman at the Council's August meeting.

David has served the state of Georgia in variety of positions since beginning with the Game and Fish Commission in 1950. Since then he has served as Coastal Fisheries Supervisor, Chief District Wildlife Ranger, Deputy Chief of Law Enforcement and Executive Assistant to the Director of Game and Fish, prior to his present position.

This young eagle seems to be more than a handful as biologists prepare to affix leg bands and a radio transmitter.

Where Eagles Dare

The efforts to re-establish the Southern Bald Eagle to its former range by biologists of the Game and Fish Division of the Department of Natural Resources (DNR) have successfully passed the first critical stage. Both eaglets have been released from their manmade nest on the northern end of Sapelo Island and are flying free.

The young eaglets arrived in Georgia on June 6. Since then, their activities have been monitored with a closed-circuit television system and food has been provided twice a day.

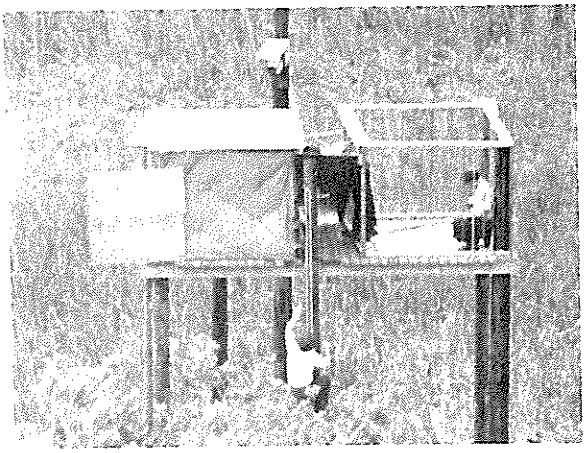
When the birds seemed ready to fly, their release was scheduled, both were fitted with leg bands and one of the birds was given a radio transmitter and green and white wing tags.

Just before the scheduled release, one of the birds escaped and has been seen regularly n the vicinity of the nest, but has made no effort to return to the nesting tower for food.

The second did not fly for about two weeks after the first, but is now flying well and returns to the tower for food. This feeding will soon be stopped in order to force the eagle to learn to find his own food.

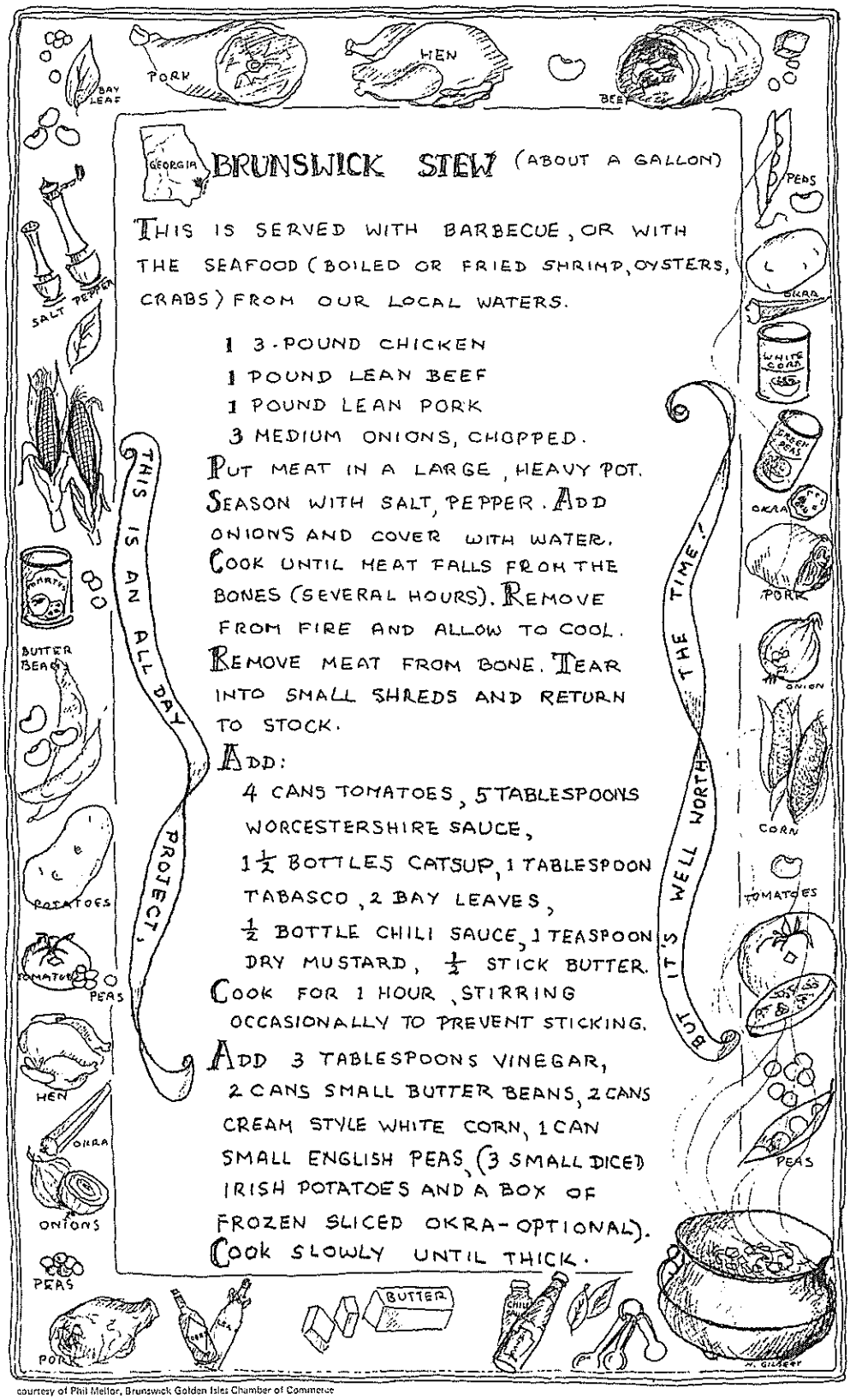
Game and Fish biologists are optimistic about the long term success of this project. The eagles seem to be adapting nicely and hopefully they will return to this area to breed and nest in years to come. This and other questions will be answered between now and next year.

In the meantime, DNR's Endangered Wildlife personnel need information from the public on sightings of immature eagles -- particularly those with green and white wing tags. Sightings should be reported to: Ron Odum, Endangered Wildlife Program, Route 2, Social Circle, Georgia 30279, (404) 557-2532.



DNR biologists inspect man-made "nest" before residents' arrival.

What's Stirring On The Georgia Coast?



GEORGIA

BRUNSWICK STEW (ABOUT A GALLON)

THIS IS SERVED WITH BARBECUE, OR WITH THE SEAFOOD (BOILED OR FRIED SHRIMP, OYSTERS, CRABS) FROM OUR LOCAL WATERS.

1 3-POUND CHICKEN
1 POUND LEAN BEEF
1 POUND LEAN PORK
3 MEDIUM ONIONS, CHOPPED.

PUT MEAT IN A LARGE, HEAVY POT. SEASON WITH SALT, PEPPER. ADD ONIONS AND COVER WITH WATER. COOK UNTIL MEAT FALLS FROM THE BONES (SEVERAL HOURS). REMOVE FROM FIRE AND ALLOW TO COOL. REMOVE MEAT FROM BONE. TEAR INTO SMALL SHREDS AND RETURN TO STOCK.

ADD:

4 CANS TOMATOES, 5 TABLESPOONS WORCESTERSHIRE SAUCE, 1½ BOTTLES CATSUP, 1 TABLESPOON TABASCO, 2 BAY LEAVES, ½ BOTTLE CHILI SAUCE, 1 TEASPOON DRY MUSTARD, ½ STICK BUTTER.

COOK FOR 1 HOUR, STIRRING OCCASIONALLY TO PREVENT STICKING.

ADD 3 TABLESPOONS VINEGAR, 2 CANS SMALL BUTTER BEANS, 2 CANS CREAM STYLE WHITE CORN, 1 CAN SMALL ENGLISH PEAS, (3 SMALL DICED) IRISH POTATOES AND A BOX OF FROZEN SLICED OKRA - OPTIONAL).

COOK SLOWLY UNTIL THICK.

courtesy of Phil Mellor, Brunswick Golden Isles Chamber of Commerce

First National Workshop On Estuarine Sanctuaries

by Patricia L. Snow

The Estuarine Research Federation held its fifth biennial conference on Jekyll Island, Georgia this October. The ERF is a federation of five regional estuarine research societies -- New England, Atlantic, Southeastern, Gulf and Pacific. Members meet on odd-numbered years to discuss the economic, scientific and sociological aspects of sanctuaries. One important aspect of this year's conference was the First National Estuarine Sanctuary Workshop that was held in conjunction with the ERF meeting.

In addition to estuarine scientists, the Sanctuary Workshop was designed to attract a national audience of educators, existing sanctuary managers and others. This type of meeting was held to increase communication between sanctuary managers and users. Goals of the Workshop were to identify problems of the various sanctuaries and to develop potential solutions. Sessions included establishing sanctuaries, research and education in estuarine sanctuaries and future directions of the Sanctuary Program.

The ERF meeting, held October 7-12, consisted of invited and contributed sessions, as well as workshops on various aspects of estuarine habitats. Sessions included wetlands value and management, fisheries dependence on estuaries, barrier islands, and techniques in estuarine science. Poster sessions held evenings during the meeting provided an informal means of presenting material. The first poster session was on Estuarine Sanctuaries, it provided a visual display of the various sanctuaries throughout the nation. It was the initial activity of the Estuarine Sanctuary Workshop which was scheduled for Oct. 8-11.

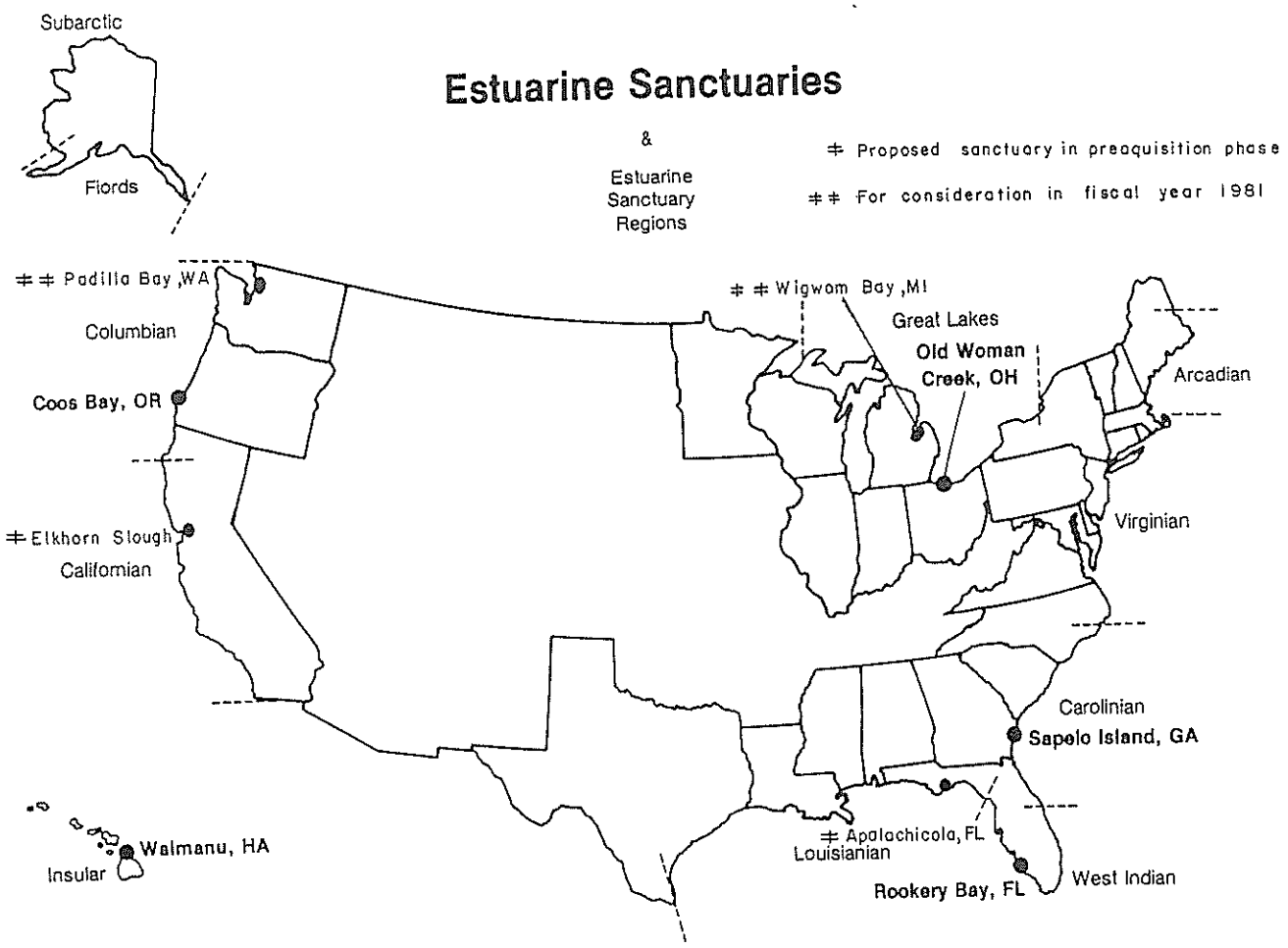
The Estuarine Sanctuary Program was established through the Coastal Zone Management Act of 1972. It is designed to provide grants to coastal states for the purpose of acquiring, developing and operating areas to be set aside as natural field laboratories. Uses of the sanctuaries include research to determine the ecological relationships present and educational programs to dissimulate this information to the public. Researchers are encouraged to use the natural and research facilities available in the sanctuaries. By protecting as much of the estuary's watershed as possible, information can be gained which will aid future management decisions. Learning centers will be provided for educational institutions and members of the public.

Once acquired, the sanctuaries are owned and operated by individual states. The goal of the national system will be to establish approximately twenty estuarine sanctuaries to provide a representative sample of the biogeographic regions and major subregions. At present there are seven established estuarine sanctuaries.

Because the Sanctuary Program is so new, there has been no previous opportunity for managers and others to meet an discuss common problems and directions. The Estuarine Sanctuary Workshop offered an opportunity for managers and researchers to become acquainted. Some of the ideas that were developed were especially important. In the research session there was much consensus on developing a national network of research areas in estuarine sanctuaries. Because sancuaries are protected, they offer an excellent site for longterm and comparative research. Ideas for increasing the contribution of sanctuary-based research to state and federal coastal zone management activities were developed. A major theme of the education session was to develop ways to reach more of the public with knowledge of estuarine processes. Because sanctuaries are or will be major sites for determining these processes, the educational and research activities should be closely linked. Results of the sessions will be published in the proceedings of the Workshop. A thorough description of each sanctuary will also be included. The final result will be an up to date source of information on Estuarine Sanctuaries. It is our hope that this Workshop will improve support for and effective utilization of estuarine sanctuaries and will increase their contribution to state and federal coastal zone management activities. The Workshop was co-hosted by the Coastal Society through funds appropriated by the

Office of Coastal Zone Management. It was held in cooperation with the E.R.F., the Georgia DNR and the Georgia Conservancy.

If you have any questions on the Santuary Program or the Workshop, please contact the author at (912) 264-7330.



Anderson Library

by Eleanor Y. Waters, Librarian

The library has publications on fishes, oysters, shrimps, crabs, estuarine ecology and many other inter-related subjects such as: navigation, barrier islands, diving; up to date fishery laws for the coastal states from Maine to Texas; Tide Tables for 1979 East Coast of North and South America; Tidal Current Tables 1979, Atlantic Coast of North America; United States Coast Pilot, Atlantic Coast: Cape Henry to Key West; nautical charts and topographic maps. An 1881 publication by Ingersoll on the Oyster industry states (Savannah) "A planter told me he received 50 cents a gallon for opened oysters, and $1 per bushel for the best single oysters." (Brunswick) "I heard of an old county-ordinance that prohibited all outsiders from tonging there."

And now that hurricane season is upon us, perhaps you would like to see our publications on hurricanes: Headlines from an article from the October 3, 1896 *Darien Gazette*, "The Wind Blew with Force and Carried Everything Irresistibly Before It." "Three lives lost." Darien had a busy port at the time: "The

(Continued On Page 12)

Librarian Eleanor Waters, who among other honors has appeared in the World Who's Who of Women supervises the Coastal Resources Division's Anderson Library. The library houses over 5,000 articles on wetlands, coastal management and coastal fisheries as well as geological maps and oceanographic charts.

British bark *Innerwick* was dismasted and otherwise damaged." "The Norwegian bark *Terzo* got aground but was pulled off without damage, we are informed." From the *Darien Gazette* of October 8, 1898: "It was a real tidal-wave. It is said that the tide rose about five feet in about twenty minutes." "It is estimated that between 40 and 50 people lost their lives." Some of the most recent publications on hurricanes are: "Hurricane evacuation plan for coastal Georgia" and "The deadliest, costliest, and most intense United States hurricanes of the century . . ." All of the above publications are available for use on the premises. Available for distribution at the library are: Georgia Coastal Fishing Regulations for 1979-1980; Contributions of the staff of the Coastal Resources Division. The most recent contribution is: Music, James L., 1979, Assessment of Georgia's Shrimp and Crab Resources, Contribution Series No. 30, 75 p.

Various films are available for showing to groups. The library is open from 8 a.m. to 5 p.m., Monday through Friday, For further information, call 264-7330.

Environmental Radiation Report

A report on "Environmental Radiation Surveillance" has been published by the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources. This report covers a time span from September 1977 to March 1979 and contains maps, charts and detailed technical data which show sampling locations and results from man-made and naturally occurring radioactivity throughout Georgia.

During the time covered by the report, approximately 6,000 measurements were made for external radiation and the evaluation of surface water, groundwater, milk, air, vegetation, soil, sediments, aquatic life and other materials. In addition, this report published by EPD gives detailed radiation data for areas around existing nuclear facilities and also presents the results of radioactive fallout concentration in Georgia caused by earlier nuclear weapons testing which was done in other parts of the world.

In the coastal area, copies of this report may be viewed at the Southeast Georgia Regional Office, Environmental Protection Division, 1200 Glynn Avenue, Brunswick, GA 31520.

EPD's Radiation Surveillance exhibit at Lenox Square, Atlanta for the "Stay and See Georgia Show" attracted crowds of people. Jim Setser, Chief of Program Coordination, and Estie Workman, nuclear chemist were on hand to explain radiation equipment.

Sportfishing Update

by Jim Music

During the next two months sportfishermen can look forward to some of the best sportfishing since the fall of 1977. After a long period of low catches, inshore sportfishing is looking better. Anglers are now bringing in some good catches of spotted sea trout, flounder, sheepshead, drum and channel bass. Small school bass are now here and the Altamaha River area looks good as a choice for bass enthusiasts.

From now through December, inshore sportfishes will be taken primarily on live shrimp. Continuing through October, inlets such as Gould's Inlet on St. Simons Island will produce large catches of spotted sea trout. Once the water temperature begins to cool (November), plug fishermen wil come out of hibernation and begin taking trout on grubs and other artificials when the trout move back into the creeks.

Fishermen are reminded to be on the lookout for tagged fish. Coastal Resources biologist now have over 1,000 fish tagged with rewards ranging from one to ten dollars. These tagged fish are easy to recognize by the yellow vinyl streamer extending outside the left side of the body.

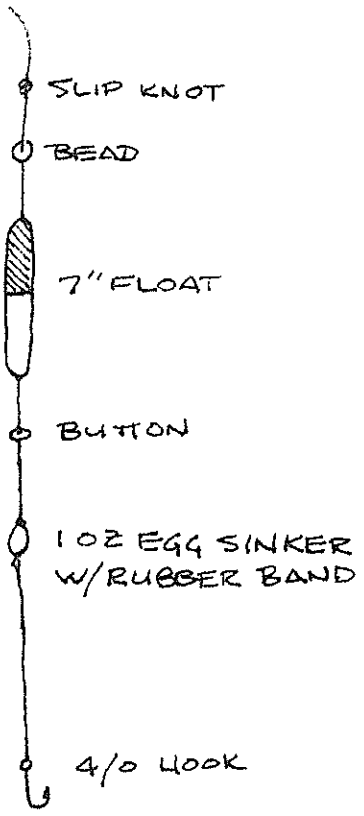
Mr. E. T. Youngblood of St. Simons Island had a nice surprise when he caught one of the first fish tagged by CRD personnel. His spotted sea trout carried a tag worth ten dollars. It was tagged at the mouth of Buffalo Creek at Turtle River on January 16, 1979, and was caught 195 days later on Cumberland Beach -- a distance of 22 miles. CRD biologists stated that the greatest movement so far came from a black drum tagged near the Brunswick pulp mill on May 30, 1979 and caught 25 days later by a Florida angler at the Mayport jetties -- a distance of 52 miles. The biologists say however, that most fish movement has averaged less than five miles and that movement so far has been random.

Biologists on the tagging project urge fishermen to let them know if they know where fish are abundant so they can quickly tag fish in the area. In the meantime, wet a hook and send

in those tags.

SPORTFISHING POINTERS

For anglers who prefer spinning gear to conventional bait casting gear, the following way of rigging a float is simple, easy and cheap. For the price of two ordinary float sinkers one can purchase a handful of egg sinkers and rig the following way:



STEPS:

1. Thread line through bead, float, button and egg sinker.
2. Run line in and out of egg sinker three times and leave a loop above the sinker.
3. Run a rubber band through the loop and pull through the sinker.
4. Twist rubber band four turns when rubber band's in place.
5. Allow 18" for leader.
6. Tie on a 4/0 hook.

Advantages: (1) Less cash. (2) Length of leader adjustable. (3) Only one knot involved (at hook). (4) Can be used with light gear.

Disadvantage: Monofilament line does not float.

Air Quality Conference

The Georgia Conservancy's Chatham County Air Pollution Project will present an Air Quality Conference on November 27 and 28. The conference will present a forum of speakers addressing the responsibilities of government, industry, environmental concern groups and the general public to better air quality in Chatham County.

Discussion will center around a 12-month study of Chatham County's air quality and feature topics such as odor emmission control, public participation in government and the industrial future of Savannah.

For further information contact the Georgia Conservancy at (912) 355-4840.

Management Plan For Billfish

U.S. recreational fishermen are the prime benefactors of a recommended Fishery Management Plan for Billfish which received approval by the South Atlantic Fishery Management Council at its September meeting on St. Simons Island.

The proposed plan specifies that blue marlin, white marlin, sailfish and spearfish may be taken only on rod and reel of the sorts customarily used in recreational fishing and further stipulates that no commercial fishery be developed for billfish in these waters. Traditional handling of billfish for food may be continued in Caribbean waters.

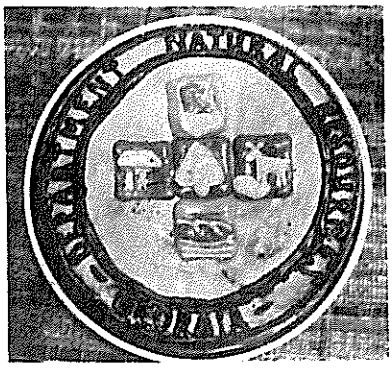
The plan recommends the release of all billfish which are not intended for use as food or trophies and urges that released fish be tagged to increase our understanding of billfish stocks. To measure the success of the Plan and its need for revision, a catch reporting system based on statisitcal sampling is to be developed by the National Marine Fisheries Service.

The South Atantic Fishery Management Council is responsible for conservation and management of fish stocks in the 200 mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia and Florida and acted as lead Council in developing the Billfish Plan for all five Councils involved.

People, Places & Things

EPD newcomers are (left to right) Jerry Knowlton, Deborah Sellers, Nancy Gribble, and Gary Reynolds. Jerry is a former fisheries biologist with over ten years of service to DNR.

Bill Kossack replaces Mike Hardisky as head of CRD's Data Management Section. Bill is a native of Athens, GA., and is finishing his Masters in statistics.



Have your cake and eat it too? Monya Allen, wife of YACC leader Andy Allen, created this work of art for a recent Coastal Resources staff party. Suitable for framing? -- No. The cake was soon devoured by CRD employees who appreciate fine art in the form of devil's food.

Estuarine Sanctuary intern Patty Snow is currently working on her masters degree in marine resources management. While in Brunswick she is working on a management plan for the Sapelo Island Sanctuary. She will return to Oregon State University in December.

Ga. DNR and U. S. Fish and Wildlife personnel stocked coastal waters with 6.6 million striped bass this past spring and summer.

WELCOME -- Majestic live oaks will beckon visitors arriving at Savannah's Wormsloe Plantation. Their path leads to the plantation's tabby ruins, trails, shell rings and a wealth of coastal history. The most recent addition to Georgia's state historic sites, Wormsloe will open its doors to the public in late November.

Coastal Resources Division
Department of Natural Resources
1200 Glynn Avenue
Brunswick, GA 31520