

MARINE NOTES



Courtesy of the Mariner's Museum, Newport News, Virginia

SPOTLIGHT ON CULTURE

Menhaden Chanteys An African American Maritime Legacy

BY HAROLD ANDERSON

On the Northern Neck region of Virginia, a peninsula lying between the Rappahannock and Potomac rivers, a group of men in their 70s and 80s have been keeping alive an uncommon legacy of African American worksongs sung on the water. As young men, they worked aboard fishing boats where they pulled up by hand nets teeming with menhaden from the waters of the Chesapeake and Atlantic. From long rowboats, as many as 40 men hauled in a “purse seine,” a net filled with thousands of pounds of fish. To accomplish this back-breaking feat, they sang what were called “chanteys” to coordinate their movements. These fishermen’s worksongs could have been heard on boats out of Virginia and North Carolina wherever they pursued the great migrating schools of menhaden along the Atlantic coast, from New Jersey to the Gulf of Mexico.

In 1991, William Hudnall organized the Northern Neck Chantey Singers at the request of the Greater Reedville Association and the Association’s Museum Committee — there were two groups of menhaden chantey singers performing in North Carolina and the Association hoped to find some singers in Virginia for a special July 4th program. Interest in the group has been so great that they’ve been performing ever since. The singers are retired African American watermen from Northumberland County who worked in the menhaden fishery over a 50-year period beginning in the 1930s, for the oldest of them, and into the 1980s for some of the younger men. All of them worked on the water during the time when chanteys were sung.

*L: *Won't you help me to raise 'em boys
C: Hey, hey, honey*

*L: Won't you help me to raise 'em boys
C: Hey, hey honey*

*L: Won't you help me to raise 'em boys
C: See you when the sun goes down*

*L: Oh the weight's on the captain's boat
C: Hey, hey, honey*

*L: Oh the weight's on the captain's boat
C: Hey, hey, honey*

*L: Oh the weight's on the captain's boat
C: See you when the sun goes down*

** “L” is sung by the leader;
“C” is sung by the crew.*

Chanteys, continued

Chanteys, and worksongs in general, occupy a special place in African American culture — they are songs that have a function: to make work go better. In the case of the menhaden fishermen, the songs rhythmically coordinated the efforts of hauling in the nets to bring fish to the surface where they could then be transferred to the holds of the “mother” ship. But this simple explanation doesn’t account for the almost inexplicable quality that the men attribute to the chantey’s effect on their ability to raise an otherwise intractable load.

“The harmony brings everybody together on the same chord at the same time, and that’s what made the work easier,” says Hudnall. On the group’s audiotape, “See You When the Sun Goes Down,” Hudnall describes the effect of the chanteys: “You’d be pulling as hard as you possibly could pull. And I mean you’d be straining. And you couldn’t get them [fish] to come up at all. Somebody hit that chantey, and started to get into it. And after awhile you see, here it starts coming up. Inch by inch. Inch by inch. After awhile they’d start showing. That’s where you’d see all this foam start dripping. You hadn’t killed them and they hadn’t killed you. But it was fifty-fifty — you were nearly dead and so were they.” Hauling up a light set might not require a chantey, but hauling up a heavy one could take as much as an hour or two of concerted pulling, and success depended on the rhythms of the music.

In a chantey, says Hudnall, “the person calling comes a little before the others. They are following the leader. They reach when he reaches — they all reach together, some ahead, some behind. But they all pull together.” He likens the call to telling a horse “git up.” When someone says “hey,” he knows he’s got to pull. In the late 1950s, the introduction of the hydraulic power block for hoisting menhaden nets made the work easier, but signaled the demise of the tradition of chantey singing. The songs were ignored for thirty years until in-



Harold Anderson

The Northern Neck Chantey Singers harmonize in William Hudnall’s backyard. From left to right are William Hudnall, Edward Taylor, Lloyd Warner, E.B. Chewning, James Carter, Selby Basker, Ellsworth Landon and Calvin Hill. Members of the group not pictured are James Cain, William Carter, Eddie Clark, Josh Curry, Richard Tarleton and Captain Charles Winstead.

terest by folklorists led to their rediscovery as a valuable part of maritime and musical history.

The Northern Neck has always been somewhat isolated — separated by water and with no access by railroad, it was traditionally served by boats and, in modern times, by trucks. The economy in the area developed around the fishing industry — crabs, oysters and especially the menhaden fishery. The small town of Reedville, located on the Great Wicomico River at the top of the Northern Neck near the Bay, was once known as the menhaden capital of the world. At the turn of the century the town’s populace had the highest per capita wealth in the United States. Between 1873 and 1877 fishermen in the U.S. harvested 1.7 billion pounds of menhaden. While the catch has declined, the fishery remains significant. According to the National Fisheries Institute, approximately 40% of annual U.S. Atlantic coast commercial landings by weight are Atlantic menhaden. Landings for bait by other fisheries (pound net and purse seine) account for about 5% of total Atlantic catch. In 1997, 657 million pounds of Atlantic menhaden were caught at a value of \$40.1 million. Reedville remains home to Omega Protein, the last remaining

L: Oh Chesapeake Bay

C: My lordy, ain’t no money makin’ country

L: Oh Chesapeake Bay

C: My lordy, ain’t no money makin’ country

L: How do you know?

C: Oh lordy, how do you know?

L: By self experience

C: Oh lordy, by self experience

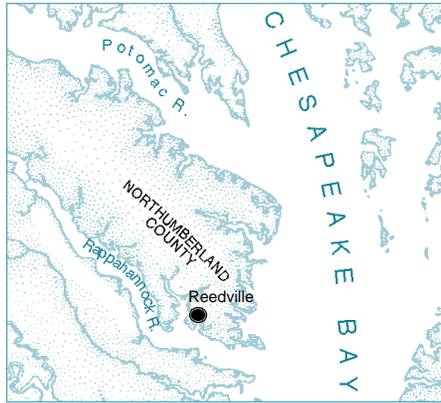
menhaden processing plant between North Carolina and Maine, and is still the major port for landings on the Atlantic.

Origins of the Chanteys

The chantey has roots in some of the earliest African customs brought and nurtured by slave populations in the United States and the Americas. In *Slave Songs of the Georgia Sea Islands* Lydia Parrish writes of worksongs called “shanties or chanteys” sung by African Americans working on plantations near a navigable river, and also reports of these being heard in Georgia as early as the 1880s. Parrish notes that the chanteys tended to die out as the work that demanded them dwindled. Exactly when chanteys

were first used for helping men lift nets in the menhaden fishery is unknown, though it is likely that the practice began when purse seine technology, developed in the northern states, came to be used in the southern states of Virginia and North and South Carolina, where African American crews and labor were common at the end of the 19th century.

The liner notes of the audiotape of Northern Neck Chantey Singers, produced by the Virginia Folklife Program, provides an excellent history of chantey singing by black menhaden fishermen. They tell of a tradition that was little known, probably because chanteys were sung only at sea by men working in a specialized fishing industry with only two centers



of production: Reedville, Virginia and Beaufort, North Carolina. Such chanteys were uncommon in American commercial fisheries, and menhaden chanteys are for the most part unrelated to traditional, and better

known, “sea chanteys” that flourished among the crews of 19th century American and British transatlantic sailing ships.

Chantey singing among menhaden fishermen, which became widespread around 1920, represents an adaptation of worksongs by African Americans in various mainland occupations during the late 19th century — lumbering and mining and building roads, railroads, levees and sailboats. Says William Hudnall, “Years ago they used to work on sailboats and [they would sing as they] caulked. They had a story about a big sailboat where they had men lined up, singing and hammering away. The [big boss] went up and complained to the foreman about the

Catching Menhaden with a Purse Seine

This description of the process of catching menhaden early in the 20th century when the chanteys were still in use is drawn from The Men All Singing: The Story of Menhaden Fishing by John Frye.

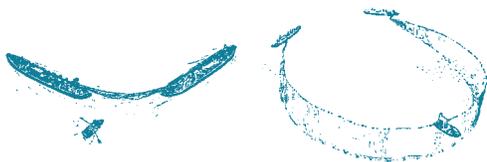
From the crow’s nest of the fishboat — perhaps an older wooden ship, 120 feet long, bought from the military after World War I and converted from steam to diesel — the captain, mate and striker searched the horizon for “whips,” tell-tale ripples made by a school of menhaden swimming near the surface. With the cry from the crow’s nest “Fish! Get ready below boys!” the mate and striker rushed down the ratlines, the mate to lower the purse boats, the striker to set out in his drive boat. They lowered the port and starboard purse boats down from the davits into the water and sixteen to twenty men jumped into each boat, manning the five heavy sixteen-foot oars. The captain stayed aloft, watching the fish and watching the striker.

Once the striker located the school of fish, the captain rushed to board the starboard purse boat and the two boats cast off, lashed together with a coupling line. The mate’s boat and the captain’s boat then pushed apart and rowed toward the striker, who directed them as he watched the school, sometimes herding the fish by striking the water with his oar. As they rowed, they paid out the long straight net, or purse seine, over the stern while the men rowed and the captain or mate steered with oar or tiller. If everyone had done their job, the fish were herded into the com-

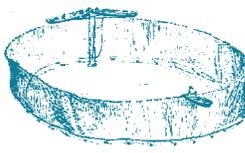
pleted circle, and the biggest and strongest man dropped the heavy “tom” overboard, a weight with two ropes attached, closing the bottom of the net to form a “purse.”

Then the work began. The boats were cleared of oars, attached by lanyards to prevent them from drifting away, and the buntpullers began pulling up the fathoms of loose net until the fish were bunched together. Finally the large boat came alongside the two purse boats and the heavy labor of raising the fish began. At first the net came up yard by yard, then it became taut, the work harder and harder. With light sets of ten, twenty or fifty thousand fish, there were would be no singing. The men could “harden” the net with little exertion and sometimes little interest since a light set meant little money to take home.

But when a heavy set came, two hundred thousand fish or more, “inspiration,” says Frye, “came to the chanteyman. The drama and sweetness of the verses were heightened by the preceding and between-verse noisy, obscene chatter. They scolded each other for not pulling their weight or crowding.” Using the chanteys and every ounce of their strength, the men pulled the fish to the surface, where dip-nets scooped them into the hold of the mother ship to be transported back to port and sold. ✓



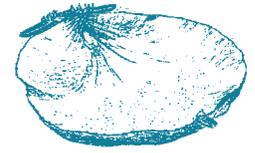
Purse boats play out the net as they surround a school of menhaden.



The “tom” is dropped to anchor the net.



The bottom of the net is closed and the crew begins pulling the catch to the surface, where it will be transferred to the “mother” ship.



A History of Menhaden Fishing

BY HAROLD ANDERSON

The Atlantic menhaden, *Brevoortia tyrannus* — also known as alewife, bunker, pogy or fat back, and called Munnawhateaug by native Americans — is a small fish growing to little more than a foot in length and considered inedible by most people because of its strong oily flavor. It feeds on plankton, forming a vital part of the food chain as prey for larger fish. Menhaden has remained a valuable commodity in Virginia, North Carolina and the Gulf since the 1870s.

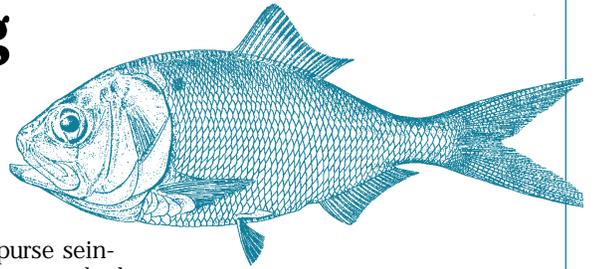
The modern menhaden industry emerged in New England early in the 19th century, after the species was recognized as a valuable alternative to whale oil, for lubricants, as fuel for lamps and in the making of soap and paint. Factories for rendering menhaden were first built on the shores of Massachusetts, Maine, New York and Connecticut. By the beginning of the 20th century menhaden served as a component of fertilizer and animal feed, and in the manufacture of paints and other substances such as fingernail polish and perfume. In more recent times, it has also been used as a cooking oil and an ingredient in processed foods such as cookies and cakes.

According to John Frye, early New Englanders caught menhaden in weirs, in haul seines worked from the shore, or in gill nets worked from canoes and small ships. The first use of the purse seine to catch menhaden in 1845, by Rhode Islanders who had invented it 20 years earlier, he says, was the single greatest advance in the industry. The purse seine was not widely used until the 1870s, however, when it led to the development of the purse boat, one of several technical improvements that made the eventual emergence of a menhaden chantey

tradition possible and necessary.

Use of purse seining to harvest menhaden continues today, but since the development in the 1950s of the hydraulic power block for pulling up the net, there has been no need for either chantey singing or large crews. Other mid-century refinements included making lighter, faster and more maneuverable aluminum rather than wooden purse boats with motors instead of oars; more durable nylon seines instead of natural fiber nets; and large fish pumps, which eliminated the difficult work of transferring the catch from the net into the hold. In addition, spotter planes took over the work of sighting schools of menhaden, radioing locations to captains on board ship. With these changes, harvesting efficiency increased dramatically.

In recent years the menhaden fishery has suffered a decline, due primarily to international market conditions affecting the price of menhaden products. The number of processing plants on the Atlantic Coast has declined from eight in 1981 to only two at the close of the 20th century. Still, according to Richard C. Collins of the Institute for Environmental Negotiation at the University of Virginia, the Atlantic Coast menhaden harvest is the largest single-species fishery on the Atlantic Coast and is also the most concentrated fishery in the Chesapeake Bay. Over seventy percent of Atlantic menhaden is still processed in Reedville, and the industry remains a significant part of the region's economy. ✓



Chanteys, continued

men down there singing, and [the foreman] said 'do you want me to make them stop?' He said 'yeah' and then they didn't know how to work! They sang chanteys and that's what made the work go!"

African American worksongs go back to a West African tradition that combines the call and response form, the improvisatory nature of the words, and the functional relation of the songs to the lives of the singers. By bringing together the combined efforts of men laboring at a common task, the work song actually improved the workers' efficiency and made it possible for them to do things they could not do with uncoordinated individual effort. The fact that laborers

L: Oh, Mama Liza

C: Mama Liza Jane

L: I got a girl in Baltimore

C: Mama Liza Jane

L: When she go walking down the street

C: Mama Liza Jane

L: All the little birdies go tweet, tweet, tweet

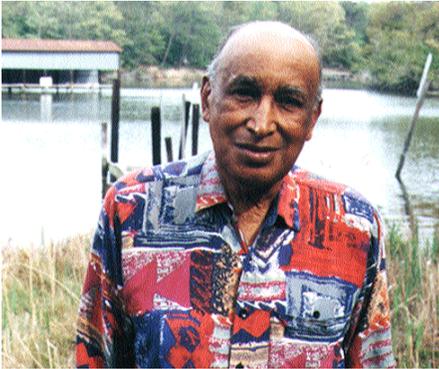
C: Mama Liza Jane

accomplished more work if they were allowed to sing has been documented since the time of slavery so overseers not only encouraged slaves to sing, but often tolerated critical or satirical lyrics. As Frederick Douglass wrote,

"A silent slave is not liked by the masters." Worksongs allowed black workers to gain a measure of control over the work — to turn it into a form of expression and to control the pace of the work itself.

The Chanteymen

African American watermen, like their white counterparts throughout the Chesapeake region, have always been self-reliant and independent. Making their livelihoods on the bounty of the Bay was one of the most profitable occupations for those on the Northern Neck in the first half of the century, particularly for young men. The work was mostly seasonal — the menhaden season usually ran from May until October, occasionally in a warm year stretching until Thanksgiving, or even later as the larger boats



Harold Anderson

“The menhaden industry was not the only one that sang chanteys,” says William Hudnall, manager of the Northern Neck Chantey Singers. “They [sang working on] railroads and chain gangs.”

ranged farther down the coast hunting enormous schools of fish. When nets were hauled by hand, the crews were primarily African American, while the captain and the mates were mostly white. Crew work on a menhaden boat during those times was grueling. “The work required brawn,” says Hudnall, “you had to pull that net.” Those who did it were mostly young men in their teens and twenties.

Early on the crews had to shovel up to a ton of coal onto steam-driven vessels at quayside before heading out to sea to row purse boats and haul heavy nets. The vessels lacked the most rudimentary amenities, like toilets or water for washing or refrigerated holds, and the men were sometimes at sea for days and weeks. The smell of menhaden, soaked in ammonia as a preservative, along with the latrines on board, were hard to take. Now, in contrast to the early days of menhaden fishing, Hudnall says, “Everything is nice, just like a floating hotel. You may get a little smell from the fish sometimes, but they freeze them right on the boat.”

The crew had to deal with a system that was sometimes abusive. Captains would at times hold back some of each man’s pay — in the early days when the pay was \$25 a month, they might hold back \$5 a month to be paid at the end of the fishing season to ensure that the crew would stay for the duration. Says

To Hear a Menhaden Chantey

A sample of menhaden chantey singing by the Northern Neck Chantey Singers, who allowed us to record two songs during a practice session, is included with the web version of this newsletter at: www.mdsg.umd.edu/MDSG/MarineNotes/JanFeb00/index.html/.

“See You When the Sun Goes Down,” a commercial audiotape by the Northern Neck Chantey Singers with songs and interviews of the men talking about how the chanteys worked is available from the Reedville Fishermen’s Museum. The recording was produced by the Virginia Folklife Program for the Reedville Fishermen’s Museum and made possible by a grant from the Folk Arts Program of the National Endowment for the Arts, with additional support provided by the Greater Reedville Association and the Virginia Foundation for the Humanities and Public Policy. To order a copy of the tape, which sells for \$12.00, contact the Reedville Fishermen’s Museum, 504 Main Street, Reedville, Virginia 22539, telephone: (804) 453-6529, e-mail: bunker@crosslink.net.

Hudnall, “We used to have a problem sometime with some of the captains — when it got close to the end of the season, they got hard to get along with because they wanted you to quit and they could put that \$5 [a month] in their pocket!” Though there were no labor unions to improve conditions, one rule was sacrosanct: the captain would never fire a crew member at sea and the crew would never quit. “You’d never quit at sea, because on the water you depended on each other. You’d never jeopardize [each other’s] safety — that was a code we wouldn’t violate. Soon as you got on the dock you might take a brick and hit him in the head,” he jokes, “but you wouldn’t do it on the water.”

Work on the menhaden boats afforded financial independence to young black men. At the same time, they suffered from harsh and sometimes abusive working conditions and from separation from loved ones. In keeping with the tradition of field hollers, worksongs and the blues, chanteys gave the crew freedom of expression — the songs expressed all manner of thoughts and ideas from loss to lust to criticism of captains. In general they depicted the circumstances and concerns of the singers. The lyrics of various songs formed a vocabulary — lyrics and verses from different songs, including blues and even gospel at times, were interchangeable and formed a pool for im-

L: Everywhere I . . .

C: I look this morning

L: Oh, a sign of rain

C: My lordy, lord, lord, sign of rain

L: Oh, Captain don’t you know

C: My lordy, all your crew is going to leave you

L: Oh, next pay day

C: My lordy, lord, lord, next pay day

L: Oh, the captain’s got a new girl

C: My lordy, new girl, new girl

L: Oh, the captain’s got a new girl

C: And the mate’s got his eyes on her

provisionation of new songs that enabled the singers to express their day-to-day thoughts and concerns.

Crews sang of work and homesickness, relationships and the women left behind. They repeated the lyrics from familiar blues songs and, just as in blues, no subject was out of bounds. Beyond earshot of anything but fish and birds, the young men sang songs of whatever came to mind without regard for any sense of what might be fitting or seemingly on land. “They were just as wild and rough as anything you’ve seen in your life,” says Hudnall. “That was the first problem we had when we formed the group — we cleaned [the songs up] cause all this language is different.

For More Information

- More about the Northern Neck Chantey Singers and the project that supported the production of their audiotape is on the web at minerva.acc.virginia.edu/~foundhum/vfp/chanteys.html.
- Information about the chantey singers in Beaufort, North Carolina, is on the web at www.ncarts.org/ncfha/menfa_fa.html.
- Virginia Marine Resources Bulletin, Spring 1994, Volume 26, Number 1. A concise overview of menhaden, including life history, catching and processing fish and chantey singing. Available from the Virginia Sea Grant Program, Sea Grant Communications, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062, phone (804) 684-7164. A pdf copy may be downloaded from the *Maryland Marine Notes* website, www.mdsg.umd.edu/MDSG/MarineNotes/Jan-Feb00/index.html/.
- *The Men All Singing: The Story of Menhaden Fishing* by John Frye, 242 pp., provides a thorough look at menhaden — from the species itself to the history of the fishing and processing industries and the tradition of chantey singing. Reprinted in 1999 by the the Reedville Fishermen's Museum, which sells copies for \$19.95. Order by phone, (804) 453-6529, or e-mail, bunker@crosslink.net.
- To find out about booking a performance by the Northern Neck Chantey Singers, contact William Hudnall, Rt. 3, Box 225, Heathsville, Virginia 22473.

Chanteys, continued

What was said wasn't even fit to say out there on the water."

Sometimes when they perform, says Hudnall, people familiar with the old ways ask to hear "Abilena," a song about a woman of ill repute — "She was a lady of the night, and the attributes that she had, when you talk about that on the water, that wasn't even fit for the birds to hear!" Still, some of the bawdier songs were very effective when it came to hauling nets, according to Hudnall: "They always say you'd raise more fish with 'Abilena' than any other chantey."

Rediscovering a Legacy

When Hudnall was approached in 1991 about getting together some men to sing chanteys for a special program, he thought it had been too long to locate any but decided to give it a try anyway. To his surprise he found thirteen former fishermen willing to participate. The men in the group, all deacons in their churches, were reluctant at first to sing chanteys at all. They finally decided they could do it if they cleaned up the lyrics. As the last of a group of fishermen who participated in chantey singing, they

feel it is important to document and preserve this integral part of African American maritime history. Hudnall says they don't know how long they'll be able to continue, but they'll do it as long as they can. They've performed throughout Virginia, in Maryland, and they've had requests to sing all over the country.

"These songs represent a very unusual if not unique example of work-songs that developed in the 20th century and evolved out of the classic work-song tradition," says ethnomusicologist Luvenia A. George, Program Coordinator for the Smithsonian Division of Cultural History. "Wherever black people worked there was music and these chanteys represent the men who worked on the seas. The original sources of these songs are dying out so it is more important than ever to preserve them." Hudnall and the singers will perform in early May at the "Blessing of the Fleet," in Reedville and in July at the Mariner's Museum in Newport News, Virginia, continuing to keep alive that legacy. ✓

Harold Anderson is a freelance researcher, writer, lecturer and musician who specializes in African American social history and arts.

Summer Intern Positions



The Otter Point Creek Alliance and the Chesapeake Bay National Estuarine Research Reserve in Maryland (Chesapeake Bay Reserve) are planning to co-sponsor one or two undergraduate or graduate students to conduct a summer 2000 research project within the Otter Point Creek Component of the Chesapeake Bay Reserve.

The Otter Point Creek Component is one of three in the Chesapeake Bay Reserve. With 672 acres of upland and riparian forest, tidal freshwater marshes, streams, creeks, submerged aquatic vegetation and open water, it is part of the Bush River-Winters Run system near Abingdon, Maryland.

Particular attention will be given to those applicants who plan to study the effects of high sediment or nutrient loading on the marsh or water, the sources of sediment or nutrients, or biogeography of particular plant or animal species.

Interns will receive a stipend totalling \$1,500 in three equal installments of \$500. Final payment is made upon the receipt of the final report. In addition, the Chesapeake Bay Reserve will provide up to \$500 for supplies and/or sample analysis.

Applicants should submit a short proposal (less than three single-spaced pages that include an introduction, hypothesis, brief methods, expected results, potential management implications and references), unofficial transcripts, a letter of support from a faculty advisor and two letters of recommendation (under separate cover) and a one-page resume. Applications are due by March 15, 2000.

Send complete applications to: Ms. Heather Helm, Site Manager, Otter Point Creek Component, 700 Otter Point Road Abingdon, Maryland 21009. For more information, contact Heather Helm by phone, (410) 612-1688, or by e-mail, hhelm@erols.com.

Maryland Students Receive Knauss Fellowships



Kim Benson



Ruth Kelty



David O'Brien

Kim Benson, Ruth Kelty and David O'Brien, all University System of Maryland graduate students, are Maryland recipients of Knauss Marine Policy Fellowships for the year 2000. Benson is in the Masters program for Sustainable Development and Conservation Biology on the College Park Campus; Kelty and O'Brien are working on Doctorate and Masters degrees, respectively, in the System-wide Marine-Estuarine-Environmental Science (MEES) program.

The Fellowship Program, begun in 1979 and coordinated by the National Oceanic and Atmospheric Administration's (NOAA) National Sea Grant Office, provides graduate students across the nation with an opportunity to spend a year working with policy and science experts in Washington, DC.

Kim Benson will spend her fellowship year with NOAA's National Ocean Service, in the Office of Coastal Resource Management's Marine Sanctuary Program, where she will work on management issues in several sanctuaries around the country. Benson received her Bachelor of Science degree in Marine Biology from the College of Life Sciences at the College Park campus in 1997. For the past two years, she has been a graduate research assistant helping with grants proposal management at the Maryland Sea Grant College. While there, she conducted a special project in which she analyzed all twenty years of the program's research data and created an interactive database for that information and for ongoing and future research. The

database includes research projects, personnel, institutions and resulting publications and will be available on the program's website.

In September, 1998 Benson served as an intern at the State Department's Office of Marine Conservation where she worked on international agreements for protection of the sea turtle and the conservation of commercial fish species. Benson has focused her recent graduate work on biological conservation in the marine and coastal environments with an emphasis on an interdisciplinary and experiential approach to research, policy and management in problem solving.

Ruth Kelty will devote her fellowship year to working in NOAA's National Ocean Service (NOS) in the Office of the Senior Scientist. The projects she will focus on include developing a national eutrophication program for NOS and developing a strategy for a national coastal monitoring program. She will also continue to pursue her interest in coral reefs by helping NOS with the Coral Reef Task Force initiative. She graduated in 1995 with a Bachelor's Degree from Middlebury College with a joint major in Biology and Environmental Studies. She is currently in her fifth year of graduate study in the MEES program where she is working toward a Ph.D. in Marine Biology which she hopes to complete this summer. Her dissertation research investigates the mechanisms of phosphorus uptake and utilization by corals and sea anemones in relation to coral physiology and reef eutroph-

ication. She has been conducting her field and laboratory work at the Bermuda Biological Station for Research under the supervision of scientist Fred Lipschultz.

For his fellowship, David O'Brien will work full-time with NOAA's National Marine Fisheries Service, in the Office of Protected Resources, Endangered Species Division, under Division Chief Wanda Cain. His exact role in the division has not been defined yet, but possibilities include working with recovery efforts for sea turtles, Pacific salmon or other listed or petitioned species.

O'Brien completed his B.S. degree in Zoology from the University of Massachusetts in 1990. Since then he has worked in freshwater research, including two years as an aquaculture extension agent with the Peace Corps in Cameroon. He enrolled in the MEES Program in September 1997 and is working with researcher Ed Houde at the University of Maryland Center for Environmental Science (UMCES) Chesapeake Biological Laboratory to study the causes of recruitment variability of the bay anchovy, the most abundant fish prey species in the Chesapeake Bay. He hopes to complete his Masters degree this summer.

The process for selecting Knauss Fellows begins with the submission of applications by candidates recommended for their excellence by Sea Grant Directors across the nation. Fellowships run from February 1 to January 31 and pay a stipend of \$32,000.

The application deadline for next year's Knauss Fellowship Program is August 31, 2000; however it is useful for those interested in applying to contact Maryland Sea Grant in early spring for guidance and possible volunteer project opportunities. Student must be enrolled in a graduate or professional degree program in a marine related field at an accredited institution in the United States.

For more information, or an application brochure, contact: Susan Leet at Maryland Sea Grant by phone, (301) 405-6375, or e-mail, leet@mdsg.umd.edu. Fellowship information is also available on the web at www.mdsg.umd.edu/NSGO/Knauss.html.

End Notes



■ **Alien Species Symposium**

Jack Greer and Jonathan Kramer

of the Maryland Sea Grant College organized a symposium on the science of "invasion biology" at this year's American Association for the Advancement of Science (AAAS) Annual Meeting on February 18 in Washington, DC. Titled "Alien Species in Coastal Waters: What are the Real Ecological and Social Costs?" the symposium brought together a panel to review conceptual and scientific issues related to the science and to pose questions that will need to be answered as the discipline matures. Panelists included researchers Greg Ruiz, Smithsonian Environmental Research Center; David Pimentel, Cornell University; Jodi Cassell, California Sea Grant Extension; and philosophy professor Mark Sagoff, University of Maryland, College

Park. For a copy of a thought-provoking paper by Sagoff that questions the underlying conceptual framework of many economic, environmental and ecological assumptions, visit the web: www.puaf.umd.edu/IPPP/fall1999/exotic_species.htm. For questions or additional information, contact: Sea Grant National Media Relations Ben Sherman, (202) 662-7095 or Maryland Sea Grant Communications Jack Greer (301) 405-6377.

■ **Bay Agreement Draft Online**

A draft of the new Chesapeake Bay Agreement is currently available for public comment through March 31. To learn more about the Agreement and to voice your comments, contact the Maryland Tributary Strategies Program at (410) 260-8710. To review the New Bay Agreement online, visit the web at: www.chesapeakebay.net/c2k.htm.

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