

Satellite view of the mouth of the Yangtze.

## JOINT STUDY OF YANGTZE PLANNED

In April MSRC Director J. R. Schubel, Associate Director for Research D. W. Pritchard, and Professor H. H. Carter spent two weeks in China planning joint studies of the Yangtze River and estuary with their colleagues at the Shanghai Normal University's Coastal and Estuarine Studies Institute, the Shanghai Waterways Bureau and the Second Institute of Oceanography in Hangzhou. The three MSRC scientists also presented a series of lectures and gave the keynote addresses at the first annual national Estuarine and Coastal Symposium of the Chinese National Limnology and Oceanography Society.

The Yangtze is the largest and longest river in China and the third largest river in the world. It traverses central China, running roughly east to west for more than 5,500 kilometers before discharging into the East China Sea near Shanghai. The Yangtze and its tributaries form one of the world's most important commercial waterway networks, with nearly 40,000 kilometers of rivers and streams navigable by native junks and rafts during the summer months of high riverflow.

At its mouth the Yangtze has an average water discharge of 28,300 cubic meters per second with peak flows of 90,000 cubic meters per second during floods. Its average sediment discharge is more than half a billion tons per year. For comparison, the Hudson River discharges water at an average of 510 cubic meters per

second and sediment at one to two million tons per year. The Yangtze discharges more sediment in an average day than the Hudson River does in an entire year. About 30 percent of the Yangtze's sediment discharge is deposited within the estuary; the remaining 70 percent on the Yangtze delta in the adjacent East China Sea. Shipping channels through both areas require frequent dredging with total volumes of dredged material amounting to nearly 20 million cubic meters per year.

The Yangtze is characterized not only by high riverflow, but also by high tidal flow with maximum tidal currents of 4 to 6 knots (200-300 cm/sec). The tidal rise and fall of the river surface extends for more than 600 kilometers upstream from the river's mouth, and reversing tidal currents are observed for 270 kilometers. Because of its high riverflow, the head of the estuary--marked by the landward limit of sea salt--extends inland for only a few tens of kilometers. Because of the large influx of sediments, the Yangtze estuary basin is being rapidly filled, forcing the sea to retreat an average of nearly 40 meters per year. During the summer period of high runoff the estuary is completely displaced seaward from its basin and out into the East China Sea. The estuary is not only being forced seaward but is being constricted at its mouth and is migrating to the south. Two thousand years ago the mouth of the estuary was nearly 180 kilometers wide. Today it is only 90 kilometers across.

MSRC personnel expect to begin collaborative studies of the Yangtze with Chinese oceanographers late in 1980. The emphasis of these studies will be on circulation and sedimentation.

## MONTAUK MARINE BASIN RESEARCH SCHOLARSHIP

September 1980 will mark the beginning of a scholarship fund established by Carl Darenberg, Jr., owner of the Montauk Marine Basin. The \$1,000 Montauk Marine Basin Research Scholarship will be awarded annually to an MSRC student to help cover the cost of research on a problem important to Long Island's coastal waters. According to Dr. Schubel, Director of MSRC, the scholarship will be used to encourage innovative research that may have large scientific and societal benefits.

## 1980 YEAR OF THE COAST

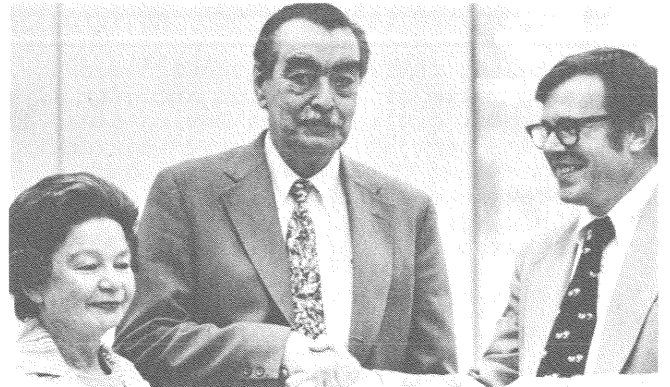
President Carter stated in his August 1979 "Message on the Environment"

The coastal zone is subject to unusual pressures, both from natural causes and human activities. The land and water resources which support the environments and economies of coastal communities are in danger of depletion. The opportunity for our citizens to enjoy beaches, bays, and marshes is often threatened. I support efforts to improve our understanding of these coastal issues, and I heartily endorse the designation of the year 1980 as the 'Year of the Coast.'

Society makes varied and often conflicting demands on our coastal waters. We use them for cooling the condensers of steam electric stations; we use them for shipping and transportation; we use them as receivers for some of our waste products; we use them for commercial and recreational fishing; and we use them for recreation--for re-creation. We place a high value on conserving the aesthetic qualities of these environments: qualities that make living in the coastal zone unlike living anywhere else on Earth. The great value of these areas lies in the multiplicity of uses they serve but herein also lies their vulnerability. If ever there were a place in the World where people will have to use their heads to learn to live in harmony with their environment, it's in our coastal areas. People concentrate in the coastal zone. For example 20.5 percent of all the people (37 million) in the co-terminous United States live in the strip of the Atlantic coastal zone between Portland, Maine and Norfolk, Virginia; 20.5 percent of the population in 1.8 percent of the area--an average population density of 688 inhabitants per square mile.

While studying the coastal environment is not a new task for us, we are "rallying to the cause" and seek to raise an endowment fund of \$500,000 over the next twelve months to assure a permanent position for a Coastal Marine Scholar. This scholar would devote himself or herself entirely and without distraction to the study of coastal problems. The position would be permanent, the holders of it transient. By limiting appointments to this prestigious position to three years we can ensure maximum effectiveness and can guarantee the persistent focus of the position on important coastal problems. Holders of the position would be recruited through national searches. The individual selected might come from academia, industry or government.

If you share our concern for conserving those qualities of the coastal environment that we cherish, please join us in this important effort.



C. A. Schwartz

MSRC bade Acting President Richard P. Schmidt farewell on 9 June 1980 before he resumed his duties as President of the Upstate Medical Center. J. R. Schubel (right) presented Dr. and Mrs. Schmidt with a small token of MSRC's appreciation for their services to the Center and the University.



C. R. Jones

The Center's new research vessel R/V SIOME gets its first sea test in Great South Bay. The Japanese word "Siome" was first used by Professor Uda of Tokyo University of Fisheries to describe oceanic fronts.



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