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Creating the College of the Sea

The Origin of the Sea Grant Program

By John Miloy



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Edited by Bland Crowder

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Preface

There is in the human spirit a powerful drive to understand origins, to know the foundations of our ideas, institutions and values. Inevitably, however, the passage of time and the intrusion of current concerns dull our individual and collective memories. Ideas rich in inspiration and subtlety become reduced to slogans, and the vision and commitment of individuals are too easily forgotten.

For many who have befriended and served Sea Grant from its start, the details of its origins no longer stand in sharp relief. For new members of the Sea Grant network there is little understanding of the ideals and inventiveness that created the program they serve. And for those seeking to understand the successes and deficiencies of Sea Grant, and its role as a model for other public programs, there can be no comprehension without full appreciation of the forces that led to passage of the Sea Grant Act.

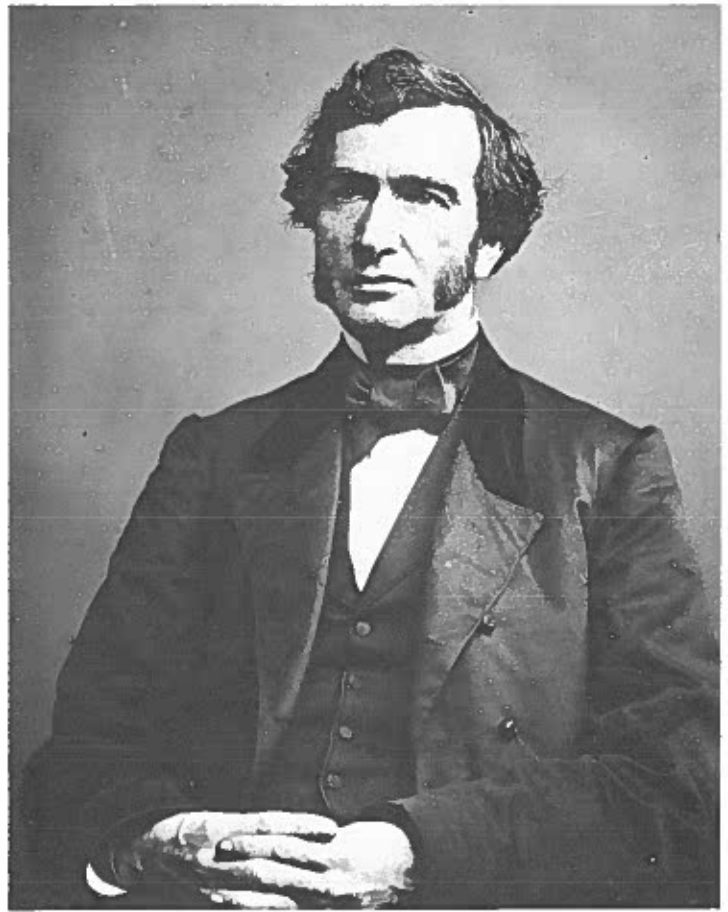
This study, initially written by John Miloy as a Master's thesis at Texas A&M University, provides a sharply drawn sketch of the circumstances and individuals who, in a remarkably short time, turned an idea into a major marine program. Based on a review of personal papers and correspondence, particularly those of Dr. Athelstan Spilhaus, Mr. Miloy has successfully captured the enthusiasm, commitment and political skill surrounding the origins of the Sea Grant Program. I wish to extend my personal thanks to Mr. Miloy for allowing us to share his study with those interested in the origins of the program. I also wish to acknowledge the skillful editorial

work of Mr. Bland Crowder, who has put a thoughtful thesis into a form which I hope many will find an intriguing and provocative reminder of our beginnings.

Feenan D. Jennings
Texas A&M Sea Grant College Program
College Station, Texas
February 1983

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Justin Smith Morrill

The Morrill Act of 1862 revolutionized higher education in the United States by creating the land grant college. Vermont Congressman Morrill's bill became the model for the Sea Grant legislation more than a century later.

Photo courtesy of Library of Congress.

Creating the College of the Sea

The Origin of the Sea Grant Program

America's greatest contribution to higher education may have been the land grant college concept. Until the Morrill Act was passed in 1862, higher education in this country was patterned after the traditional European system, concentrating on "philosophy, theology, dead languages, and mathematics."¹ Introduced by Vermont Congressman Justin Smith Morrill, the bill provided America's most important educational mandate for more than a century.

Through federal-state arrangements, land was set aside for development of "agricultural and mechanic arts" colleges. Later acts, notably the Hatch Experiment Station Act of 1887 and the Smith-Lever Act of 1914 for agricultural extension work, created a unique university-based system that combined education, research, continuing education and extension activities.

More than 100 years after it began, the successful land grant program became a model for another partnership between the federal government and universities. The National Sea Grant College Act of 1966 was intended to apply univer-

sity expertise to develop the nation's marine resources as the Morrill Act provided for development of the land.

Just as the land grant program dealt with production from the land, Sea Grant is concerned with production from the ocean, and, like land grant, it encompasses engineering, environmental quality, transportation, recreation, law, economics and other related fields. To accomplish Sea Grant's three-fold mission of research, education and advisory services, the Act's proponents envisioned an institutional arrangement leading to "Sea Grant Colleges," a designation implying excellence in programs and commitment to the Sea Grant concept.

The Sea Grant College Program is the child of the 89th Congress, born in an era of enthusiastic belief that the oceans are a vital resource requiring the concentrated attention of government, industry and universities. During the Sixties the public was acutely aware of science and technology, and oceanography became an important field of interest. It had not always been that way.

Rediscovering the Ocean

In 1958, U.S. universities conferred 2,780 doctoral degrees in the sciences, only 13 of which were marine-related. Of the 100,000 scientists and 500,000 engineers in the work force then, only 3,000 called themselves oceanographers,² and annual funding of oceanographic research totaled only \$30 million.

This apparent disinterest did not apply to the other sciences, however. In 1958, research and development expenditures were \$5 billion, reflecting a 500 percent increase in just 10 years. Funding of oceanography, however, had increased by only 50 percent during that period.³

Oceanography had not always been a stepchild, but it had never enjoyed a prominent role in the affairs of science. Extensive use of submarines during World War II demanded greater knowledge of the sea, particularly regarding underwater acoustics, and contracts and grants to industry and universities were common then.

Immediately after the war, oceanography's status declined, but during the following decade concern for oceanography gradually increased. On behalf of himself and officials from other federal agencies, in 1956 the Chief of Naval Research wrote Detlev Bronk, president of the National Academy of Sciences, suggesting that the Academy define national oceanographic research needs.^{4,5} In November 1957 the National Academy of Sciences Committee on Oceanography (NASCO) met for the first time.

Chaired by Harrison Brown, professor of geochemistry at the California Institute of Technology,⁶ NASCO was composed of 10 well-known marine scientists and engineers, seven of whom were from universities. Among them was Athelstan Spilhaus, dean of the Institute of Technology at the University of Minnesota. Edward Wenk, in *The Politics of the Ocean*, writes that when NASCO was appointed

... the ignition switch was turned on the scientific enterprise that generated many of the political events that followed, and until 1966 provided the most significant single impulse toward a new era of American exploration of the sea. That date also marked the beginning of the end to a period of intellectual isolationism of those who wished to study the sea from those devoted to utilizing it more effectively to serve mankind's needs.⁷

When NASCO was formed, the world was still astounded by the launching of Earth's first artificial satellite, *Sputnik I*, in October 1957. That event propelled science from the seclusion of the laboratory into the midst of international policy. At about the same time, President Dwight D. Eisenhower created the post of Special Assistant for Science and Technology (later renamed the President's Science Advisor) and appointed an 18-member President's Science Advisory Committee.⁸ Other federal actions followed quickly, including the creation of NASA (National Aeronautics and Space Administration), the National Aeronautics and Space Council, the Senate Aeronautics and Space Sciences Committee, and the House Science and Astronautics Committee. Budgets of the Department of Defense and the Atomic Energy Commission increased sharply. The National Science Foundation's (NSF) budget doubled by 1959 and had tripled again by 1965.⁹ The National Defense Education Act of 1958 gave new dimensions to federal support for graduate education.

NASCO Reports

In February 1959 NASCO published *Oceanography 1960-1970*, a 12-volume report recommending that the federal government assume responsibility for the nation's ocean programs and increase annual funding of oceanography from about \$24 million in 1958 to more than \$80 million by 1969.¹⁰ The report concluded

Action on a scale appreciably less than that recommended will jeopardize the position of oceanography in the United States relative to the position of science in other major nations, thereby accentuating serious military and political dangers, and placing the nation at a disadvantage in the future use of the resources of the sea.¹¹

Afraid that the NASCO report would become another dust-collector, Chairman Brown took his case directly to Capitol Hill. He found a receptive Congress, led by Sens. Warren Magnuson, Henry Jackson, Claiborne Pell and Hubert Humphrey and by Reps. Hastings Keith, Alton Lennon, George Miller, Paul Rogers and Herbert Bonner.

A flurry of Congressional activity followed the NASCO report. Between 1959 and 1966 almost 100 bills dealing with marine sciences and oceanography were introduced. Nine of them became law.¹²

One result of the NASCO report was the creation, in February 1959, of a Special Subcommittee on Oceanography within the House Merchant Marine and Fisheries Committee. In 1961 it became a standing subcommittee,¹³ chaired by Rep. Miller, who immediately called a special hearing on "Oceanography in the United States." Forty-two witnesses from federal agencies, universities and industry testified at the hearing.¹⁴

The subcommittee feared that the new Science and Astronautics Committee might try to assume jurisdiction over "inner space" as well as "outer space" and wanted to act fast.¹⁵ Indeed, Science and Astronautics Chairman Overton

Brooks of Louisiana introduced a piece of oceanographic legislation, the first of the 86th Congress, in April. It was one of six such bills introduced in the House that session. Brooks' bill was defeated, but the Science and Astronautics Committee continued to play a role in marine affairs throughout the session, after which it released a 180-page report urging congressional support for oceanography and calling for annual federal funding of marine research of \$160 million during the next decade.¹⁶

Meanwhile, the Senate responded to the NASCO report with Senate Resolution 136, introduced by Sens. Magnuson, Jackson and Clair Engel in June 1959. The resolution emphasized the importance of oceanography, commended the NASCO report, and proposed the formation of a research board to coordinate oceanography.¹⁷ During the next seven years more than 30 similar bills were introduced before the Marine Resources and Engineering Act of 1966 provided for coordination of oceanographic research.¹⁸

The Federal Council for Science and Technology (FCST) was formed in 1959 to assist the President in governmental planning and coordination of its research and development programs, including oceanography. Under FCST, the Interagency Committee on Oceanography (ICO) was formed to coordinate the oceanographic programs of about 15 federal agencies having statutory authority for oceanographic research. Ocean policy was fragmented among and within the Agency for International Development, the Departments of Defense, Interior, Commerce, State, Transportation, and Health, Education and Welfare, as well as in the Atomic Energy Commission, NSF, the Smithsonian Institution, and NASA.^{19,20}

Executive Initiatives

During the Eisenhower Administration, ICO Chairman James Wakelin reported little growth in ocean programs.²¹ Under President John F. Kennedy, however, oceanography's

fate in the Executive branch improved. During fiscal years 1960 through 1962, for instance, annual federal funding of oceanography increased from \$55 million to \$104.8 million. Kennedy surrounded himself with advisors whose interests coincided with those of the marine community. In February 1961, he delivered a special message to Congress calling for cohesion of the government's policies regarding natural resources and emphasizing the need for oceanographic research vessels.²² In a strong statement to the Senate in March 1961, he recommended increasing 1961 funding for oceanographic research from about \$60 million to more than \$97.5 million in 1962. Kennedy concluded:

Knowledge and understanding of the oceans promise to assume greater and greater importance in the future. This is not a one-year program — or even a ten-year program. It is the first step in a continuing effort to acquire and apply the information about a part of our world that will ultimately determine conditions of life in the rest of the world. The opportunities are there. A vigorous program will capture these opportunities.²³

Also, Kennedy called education in oceanography “the most important part of our long-range program in oceanography.” Congress appropriated his requested amount and added \$6 million, for a total of \$104.8 million.²⁴

By 1963, the FCST had published the ICO report, *Oceanography, the Ten Years Ahead — a Long Range National Oceanographic Plan 1963-72*. The report argued that annual federal funding of oceanography should reach \$350 million by 1972.²⁵ In 1964, NASCO re-emerged and issued “Economic Benefits from Oceanography Research,” recommending annual federal support of \$280 million during the next decade.²⁶ Funding levels never reached that amount, but they increased from \$55 million in 1960 to \$141.6 million in 1966.

Oceanographic research facilities also improved. A new Coast and Geodetic Survey ship, the *Oceanographer*, was commissioned in July 1966. On that occasion, President Lyndon B. Johnson released *Effective Use of the Sea*, a report prepared by his Science Advisory Committee that called for a federal ocean agency, doubling of federal support of oceanography by 1971, and expanded, multidisciplinary marine study centers.²⁷ He referred the report to his new National Council on Marine Resources and Engineering, headed by Vice President Humphrey.

The Council was expected to accomplish what the ICO could not do — convince Congress that oceanography was alive and well and spoke with one authoritative voice. The Council's mandate gave it the power that ICO lacked.

The Question of Organization

Kennedy's establishment of the Office of Science and Technology (OST) in 1962 had generally improved the coordination of scientific programs, so Rep. John Dingall, chairman of the House Oceanography Subcommittee, reasoned that OST was the proper vehicle for coordinating oceanography. He introduced the Oceanography Act of 1962 that summer, calling for a statutory post of assistant director of OST for marine science.²⁸ After some debate, both houses passed the bill, but Kennedy vetoed it because it gave line responsibility to OST and emphasized oceanography over other sciences within OST's purview.²⁹

When the 88th Congress convened in 1963, four bills were introduced concerning coordination of ocean programs, but none was acceptable. The climate for oceanography, and for science in general, was changing, partially as a result of Kennedy's assassination. Johnson was not as strong a supporter of oceanography. In addition, the budget climate was resistant to research growth, and congressional support waned. Of the \$156 million requested for marine affairs for 1964, only \$124 million was appropriated. In 1965 Johnson

asked for \$138 million, but Congress appropriated \$135 million.³⁰

The 89th Congress, however, passed major oceanographic legislation. More than two dozen bills concerned coordination of oceanographic programs. Magnuson re-introduced an earlier bill to establish a cabinet-level National Oceanographic Council, and it eventually passed as the Marine Resources and Engineering Act of 1966. On June 17, Johnson signed it into law.³¹

The Council, chaired by the Vice President, included a 15-member commission of representatives of government, industry and universities to offer advice and recommendations on future oceanographic programs. One member was John Knauss, dean of the University of Rhode Island's graduate school of oceanography.³²

The question of training raised by Kennedy in 1961 still had not been adequately addressed. As the 89th Congress passed the halfway mark, Athelstan Spilhaus, with strong support from universities and a handful of congressmen, offered a plan — the Sea Grant concept — that would fulfill Kennedy's dream.

Spilhaus has been called a "flywheel of the machine of American science" and its "incurable optimist." By his own definition he is a "pragmatic idealist: an innovator of the living" and a "committed futurist." All this suggests that "this remarkable scientist has an exceptional gift for pulling into his mind an encyclopedia of assorted facts and synthesizing from them better approaches by which science may serve humanity."³³ The Sea Grant idea was typical of this innovative, imaginative engineer and scientist from South Africa.³⁴

Spilhaus' Idea

The 1963 annual meeting of the American Fisheries Society was scheduled for September 12 and 13 in Minneapolis. Lloyd Smith, a professor at the University of Minnesota, was

program chairman. Although the University was not the official host, Smith felt that the meeting was an opportunity for a representative of the University to welcome the delegates, and at the same time, to present the University as a major factor in Minnesota scientific and academic thought.³⁵

Smith invited Spilhaus, dean of the University's Institute of Technology, to give the keynote address, and he readily accepted, suggesting that

... a very appropriate subject for your discussion would be the relationship between academic or university research programs and federal-and-state-agency-sponsored programs. The mechanics of these programs and their administration is not the important thing, but rather the philosophy back of them.³⁶

In his address, Spilhaus pointed out the dreadful state of ocean fishing by the United States. The nation ranked low among the fishing nations of the world, with Peru in the lead, Japan outfishing us on our West Coast, and the Soviet Union on the East Coast, at George's Bank. The general reaction of U.S. fishermen was to seek controls and agreements to protect our fisheries. Suggesting another approach, Spilhaus asked

Why, to promote the relationship between academic, state, federal, and industrial institutions in fisheries, do we not do what wise men had done for the better cultivation of the land a century ago. Why not have "Sea Grant Colleges?"³⁷

Many delegates at the meeting were affiliated with successful land grant colleges, and the phrase "Sea Grant College" made the parallel to land grant colleges readily apparent. The concept of a federal program drawing on educational institutions impressed his audience at the American Fisheries Society meeting in Minneapolis. One of those most impressed was Saul Saila, professor of oceanography at the Narragansett



Athelstan Spilhaus

"Why, to promote the relationship between academic, state, federal, and industrial institutions in fisheries, do we not do what wise men had done for the better cultivation of the land a century ago. Why not have 'Sea Grant Colleges.'"

Marine Laboratory of the University of Rhode Island. Saila took Spilhaus' Sea Grant idea back to Rhode Island where it was nourished, embellished and presented as a workable program.

Rhode Island Nurtures the Sea Grant Concept

After the meeting Saila wrote Spilhaus "Your keynote address...was inspiring and contained many points which should, it seems to me, become action programs as soon as possible."³⁸ His letter was the first of many that applauded Spilhaus' proposal for Sea Grant Colleges.

Reacting to the interest shown at the University of Rhode Island, Spilhaus wrote Francis Horn, president of the University, to explain the Sea Grant concept and its potential applications. In the letter he ventured the thought that Rhode Island could pioneer as a Sea Grant institution. He sent a copy of that letter to John Knauss, dean of the University's graduate school of oceanography.

Knauss wrote Spilhaus enthusiastically affirming support for the idea and, with Horn's endorsement, identifying himself as the University's spokesman on the subject. Knauss volunteered to organize a symposium at Rhode Island to discuss what a state university could contribute to the economic, scientific and technological development of marine resources.³⁹ Knauss had discussed the Sea Grant concept with Sen. Pell of Rhode Island and stated that "legislation can and will be introduced, and I, therefore, think it is time to reopen the idea of a conference on the sea grant college concept."⁴⁰

Building the Public Constituency

During 1964 and 1965 Spilhaus generated support for the Sea Grant concept through speeches and letters, including addresses to the Governors' Conference on California and the World Ocean, the American Association of University Women,⁴¹ the International Buoy Technology Symposium,⁴² and the First Symposium on Military Oceanography.⁴³

These talks attracted new support for the concept, particularly the speech to the Governor's conference, in which he discussed marine engineering, the challenge of controlling the sea, creation of longer coastlines, expansion of recreational opportunities by heating ocean waters, cities in the ocean, beach preservation and renewal, biological engineering to hybridize sea plants to produce sea fruits and vegetables, and the use of technology for fish harvesting. He also referred to the means to put these ideas into effect — the Sea Grant College idea. This speech was widely publicized to a growing, fascinated audience.

Spilhaus told the American Association of University Women that "We must colonize the sea. The sea covers land that is equal to 15 continents."⁴⁴ His ideas about colonizing the sea resurfaced in 1966 at Congressional hearings on the Sea Grant College Act.⁴⁵

Learning that Sen. Magnuson was interested in his idea, Spilhaus wrote him expressing his belief that a non-controversial bill could be written and offering to help write it. He also wrote Rep. Paul G. Rogers of Florida, pointing out the natural advantages of the Sea Grant College concept in his state.⁴⁶ Magnuson suggested that majority support might be easier to achieve if legislation for Sea Grant Colleges included the Great Lakes States.⁴⁷ When Congress passed the National Sea Grant College and Program Act of 1966 it declared the Great Lakes "salty."⁴⁸

Spilhaus also wrote Donald Hornig, science advisor to the President and director of the Office of Science and Technology. Spilhaus knew that no amount of enthusiasm could bring

approval of a Sea Grant College Act without the Administration's support. In his letter he reported the wide interest in the idea and sought OST's approval of the proposal. Edward Wenk, Hornig's technical assistant, replied that the Sea Grant topic would probably be discussed at a meeting in Seattle of the Office's ad hoc panel of consultants.⁴⁹ The letter did not squelch the idea, but it did not heartily endorse it. Wenk's interest in the Sea Grant Program increased later when he became executive director of the National Council on Marine Resources and Engineering, which would later be assigned coordination responsibilities for the new Sea Grant Act.

Broadening his political spectrum, Spilhaus responded to a letter from Sen. Edward Kennedy, which listed the names of recent contacts who had become aware of the Sea Grant idea. A major point emerged in Spilhaus' comment "The question is how to finance the Sea Grant Colleges on a continuing basis." In the coming months the financing debate and the question of providing continuing funding received increased attention.

At the same time Spilhaus was corresponding with Wilburt "Wib" Chapman, director of the Division of Resources of Van Camp Sea Food Company. Chapman wrote Spilhaus in December, enthusiastically supporting the idea:

... if you will look at pages 67 and 68 of my "Fishery Aspects of the National Oceanographic Program," you will see that I am touting your sea grant college idea for all I am worth. This document has gone out to about 1,500 people in the field of ocean research, nutritional research, and governmental science people in the United States, as well as a couple of hundred copies abroad. For some reason which is mystifying to me, this hastily written unrevised document has had a greater readership and enthusiastic response than anything I have sent out. Long letters have come back from busy people whom you would swear did not have the time to read through such junk, and amongst these letters have been several dealing favorably with the sea grant college idea.

In November, Chapman presented another avenue.

I wonder if it is at all possible to get this idea put before the National Academy of Science's Committee on Oceanography in some manner so that NASCO will feel it is a legitimate activity of theirs to appoint a panel to have a closer look at how this idea might practicably be implemented. . . . Perhaps it is possible for Johnny Knauss to think of some means of stimulating NASCO along this line, or of some other means by which something concrete along this line can be set afoot.

Chapman's suggestion was well taken, and in the coming months NASCO became a valuable supporter of the Sea Grant idea.

In March 1965 the peripatetic Spilhaus testified before the Senate Commerce Committee, chaired by Magnuson, in support of S. 944, Magnuson's bill that would provide a federal coordinating mechanism for oceanography. Spilhaus also took the opportunity to speak in favor of the establishment of Sea Grant Colleges in order for the nation to achieve preeminence in oceanography. Milner Schaefer, dean of the Institute of Marine Resources of the University of California at San Diego and chairman of NASCO, also testified at the hearing and heard Spilhaus' comments.⁵⁰

Acutely aware of the growing constituency for the Sea Grant idea, Sen. Pell voiced his support in a speech to the Senate in May, urging his colleagues to recognize "the potential benefits now lying dormant at our doorstep."⁵¹

Pell reported to the Senate on the mid-June meeting in Washington on "Ocean Science and Ocean Engineering," co-sponsored by the Marine Technology Society and the American Society of Limnology and Oceanography. Chairing the conference was James Wakelin, president of the Scientific Engineering Institute and chairman of ICO. Wakelin's support for the embryonic Sea Grant idea was vital to its development.



Sen. Warren Magnuson

From the late fifties, Magnuson supported legislation dealing with the sea and coordination of federal oceanographic programs. His bill, S. 944, became the Marine Resources and Engineering Development Act of 1966, which the Sea Grant Act amended later that year. Photo courtesy of Library of Congress.

Pell, who had participated in a panel discussion chaired by Spilhaus at the meeting, told the Senate, "The meeting was significant because it provided a meeting ground for scientists, engineers, and managers from the academic world, from private industry and from Government." Pell and Spilhaus took advantage of this forum and introduced the Sea Grant College idea into the panel discussion. Pell told the Senate that he intended to introduce legislation for Sea Grant Colleges soon.⁵²

On the panel was William Hargis, director and dean of the Virginia Institute of Marine Science. Hargis registered qualified "objections" to the Sea Grant idea, stressing that "we should be careful not to overcoordinate our efforts and thus reduce efficiency and productivity."⁵³ After the meeting he wrote Pell to clarify his views, emphasizing that he was not against useful, wise coordination, making science and academic activities useful to society, nor federal participation in marine science. He added, "However, I am strongly convinced that new institutions are not necessary."

Others shared Hargis' legitimate apprehension concerning the establishment of new institutions, and other issues related to the Sea Grant idea needed resolution.

The Washington meeting was successful and stimulating, but the issues were complex and raised a host of intriguing questions. Another forum was needed to explore the meaning and significance of the Sea Grant idea.

The Sea Grant College Conference

Pell's Sea Grant-related activities in Washington spurred John Knauss to accelerate his plans for a Sea Grant College conference. In June 1965 he wrote Spilhaus scheduling the conference on October 28 and the morning of October 29. He also scheduled a NASCO meeting at the University for the afternoon of October 29 through October 30.⁵⁴ Knauss reasoned that the conference would more widely publicize the idea of Sea Grant Colleges, better define the term "Sea

Grant College" and its impact on such an institution, and clarify the process of establishing and financing a Sea Grant College.⁵⁵

In July Pell introduced S. 2439 to create Sea Grant Colleges by amending the National Science Foundation Act of 1950. The bill would establish Sea Grant Colleges and support education, training and research in the marine sciences. The bill defined Sea Grant Colleges as "any suitable public or private institutions of higher learning supported pursuant to the purposes of this Act" and earmarked 10 percent of federal revenue from leases of outer continental shelf lands for grants and contracts to fund Sea Grant Colleges.⁵⁶ Pell began laying the groundwork to push the bill through Congress before the end of the 89th Session.

All was not roses for the Sea Grant idea. Periodically, a new pocket of cautious opposition surfaced. In a letter to Knauss written in August, Donald McKernan, director of the Bureau of Commercial Fisheries of the Department of the Interior, wrote, "Although we are in sympathy with the views expressed by Dr. Spilhaus, we share your uncertainty that his solution is the most practical solution."⁵⁷ Regardless, Pell's legislative action was a breakthrough in establishing specifics of the definition, financing and creation of Sea Grant Colleges. With the Sea Grant conference set for October, invitees had plenty of time to analyze Pell's bill and to consider alternatives.

The conference, entitled "The Concept of a Sea-Grant University," was co-sponsored by the University of Rhode Island and the Southern New England Marine Sciences Association. Knauss and his co-workers scheduled 14 prominent scientists and educators as speakers and panel members for the first national forum specifically designed to discuss the Sea Grant concept.

When the conference convened in Newport, Spilhaus' keynote speech added to the growing body of knowledge about what Sea Grant Colleges could be.



Francis Horn

In October 1965, proponents of the Sea Grant concept met for the first time at the University of Rhode Island. University President Francis Horn addressed the 240 participants in the Sea Grant College Conference.

Photo courtesy of University of Rhode Island Archives.

The sea-grant colleges not only would concentrate on applications of science to the sea, such as prospecting underwater, mining, developing the food resources, marine pharmacology and medicine, shipping and navigation, weather and climate, but they would relate these to the natural sciences which underlie them; to the social sciences, economics, sociology, psychology, politics and law, as they are affected by and, in turn, affect the occupation of the sea. They would also be associated with the liberal arts — literature, art, and history — which describe man's relation to the sea and enhance his enjoyment of it.⁵⁸

When Pell described S. 2439 at the conference, he added his own observations of what a Sea Grant College would be, pointing out that although proximity to the sea would be advantageous, he would "envision a national effort evolving with courses in oceanography offered at universities in our inland states."⁵⁹

Wib Chapman gave a comprehensive, eloquent address to the needs of fisheries development and their relationship to Sea Grant Colleges. He spoke of a special breed of "sea people" and observed

Forty years of kicking around this business has left me thoroughly convinced of the following thesis: The ocean weeds out from all of the races of mankind that come upon it to make a living a certain type of person. This type of person stays with the ocean, and the rest are cast back ashore to deal with the land-people.⁶⁰

His hope was that through Sea Grant the United States might produce more "sea people."

Harve Carlson, director of NSF's Division of Biological and Medical Sciences, strongly endorsed the Sea Grant College concept, speaking in favor of federal-state cost-sharing and suggesting that Sea Grant might be the means to formulate a national policy on oceanographic development and ocean engineering.⁶¹

NASCO Chairman Milner B. Schaefer told the group

We need to have scholars working closely together in the hard sciences such as physics, chemistry, biology, and mathematics; in the soft sciences, such as sociology and economics; in engineering, in law; and others. There is an obvious need for the college of the sea to bring together men of all these disciplines to carry out their scholarly pursuits, research, and education in relation to the ocean. The question is, how can this be accomplished? . . . Whatever way the problem is approached, we must not lose sight of the importance of education, research, and scholarship as an indivisible whole. The college of the sea needs, therefore, like a college of medicine, to operate primarily at the graduate level.⁶²

From the U.S. Department of Agriculture, Harold Knoblauch thoroughly reviewed the history and philosophy of the land grant movement to help the Sea Grant movement avoid mistakes of universities and government in implementing various acts pertaining to land grant.⁶³

The Debate Begins

Two discussion panels followed the formal presentations and explored the complications and opportunities inherent in becoming a Sea Grant College and the problems of implementing Pell's proposed Act. One panel member was Robert Abel, executive secretary of the ICO. Abel's ideas were important because ICO would be a critical stumbling block and because he would eventually be the first director of the National Sea Grant Program.

The 240 conference participants presented varied viewpoints, many of which centered on how universities might be supported if legislation were passed. As Abel observed, "One thing that struck me . . . was the concerted drive to carve up Senator Pell's poor little chicken before it had even emerged from the shell."⁶⁴

Francis Horn, president of the University of Rhode Island, suggested

... simply as a practical proposal in this connection, that if this concept goes through, whatever agency, NSF or an Inter-oceanographic Committee, or anyone else who's running the program in Washington, should assign on a continuing non-restrictive basis 50 percent of whatever money is available to those institutions that are designated sea grant institutions ... and take half of it for projects available to all universities.⁶⁵

Paul Fye, president of Woods Hole, returned to Chapman's idea about "sea people."

I don't think that we have done this adequately or very successfully in the past; I think we can do a great deal better, and perhaps that's the answer as to why we really and truly need to implement the sea-grant college idea.⁶⁶

Howard H. Eckles, chief of the Branch of Marine Fisheries in the Bureau of Commercial Fisheries, raised questions about NSF's administering the Sea Grant Program.

I do not sense from Dr. Carlson's paper that the National Science Foundation is very enthusiastic about this idea. He stated the National Science Foundation is neutral ground. I state we can't make progress with neutral ground.⁶⁷

In spite of disagreements about implementation of the program, Hargis summarized well the sense of the conference.

Several of us, and I'm just as guilty as others, have interjected our own selfish ambitions, and ambitions for our own programs, into the discussion; but I wish to say that in the sea-grant concept we have a good vehicle to attract public, legislative, and executive support. The cause is good. Practical results with economic, military, and social payoff will certainly result, probably much faster than we expect, and so I would

suggest that we all get together and push the notion, try to promote the program. It will be worthwhile for the nation and marine science.⁶⁸

Pell asked the participants to give "thoughtful expression of opinion by word of mouth or by letter to your own senators and representatives; it would have more effect than any other single thing in translating all our words here."⁶⁹

The National Committee for Sea-Grant Colleges

Conference participants enthusiastically endorsed the Sea Grant concept and favored Pell's bill, but they felt that some points needed clarification. Most importantly, they acted on Hargis' and Pell's suggestion to set up the National Committee on Sea-Grant Colleges to promote legislation to establish Sea Grant Colleges and to ensure that universities would help shape the Sea Grant legislation.

Formation of the Committee was an important outcome of the Rhode Island meeting. Knauss, designated head of the Committee, viewed the meeting as a springboard for legislation. The Committee included Spilhaus, Chapman and Hargis. When Senate Sea Grant hearings were held later, Hargis wrote a letter for the record, in which he stated

Early in the debate concerning this program, I was in opposition. This opposition, based on the strong conviction that additional marine research and training institutions are not justified or even needed in the United States was eliminated when it became apparent that neither Dr. Spilhaus nor you intended for the program to be used as a vehicle for establishing new marine laboratories.⁷⁰

All Committee members represented universities and included Donald Bevan, associate dean of the University of Washington's College of Fisheries; Wayne Burt, chairman of the Department of Oceanography at Oregon State University; David Chandler, director of the Great Lakes Research

Division of the University of Michigan; Galen Jones, head of the new estuarine laboratory of the University of New Hampshire; and G. Walton Smith, director of the University of Texas Institute of Marine Science.⁷¹

The Sea Grant Committee launched a campaign to arouse public and professional interest in Sea Grant legislation. Knauss and the others were aware of the impact of such moves, because they remembered Harrison Brown's efforts to promote oceanography in Congress in the early Sixties. They had also seen Spilhaus doggedly pursue his idea with Pell, Rogers, Kennedy and others.

In December Knauss contacted the Committee members, suggesting that they inform their congressional delegations of the need for and purposes of Sea Grant colleges. He asked each member to be his own state's coordinator and to face the problem of defining the term "Sea Grant College." In February 1966 Knauss circulated his draft statement "What is a Sea Grant College?" to the Committee and asked them to meet in New York later that month to amend the draft. The revision included a broad definition of the term, covering a college's responsibility to education, research and public service and examining the importance of developing marine resources. The statement recommended funding in the form of continuing institutional grants. Special project grants would be awarded on a competitive basis, possibly with matching local funds.⁷² The Committee was ready to present its views to Congress.

Congress Acts

Engineering a bill through the complicated machinery of Congress, while avoiding a Presidential veto and dealing with the Office of Management and Budget, is a formidable task. As Fitzhugh Green, Pell's special assistant, described the process,

There are certain guidelines to winning passage of any Federal legislation, and Senator Claiborne Pell (Rhode Island) who fathered the Sea Grant Bill, knows them well. The first is to build a constituency, both inside and outside of the Congress, which will support the bill; and the second is to keep on top of the bill endlessly until the President signs it into law.⁷³

The shepherding of S. 2439 through Congress was an example of Pell's ability.

Building the Congressional Constituency

The Rhode Island conference and the work of the National Sea Grant College Committee rapidly built an external constituency for the Sea Grant idea. Support and suggestions poured in to Knauss, Spilhaus and Pell. Spilhaus and Knauss had already brought NASCO into the fold, and NASCO endorsed Sea Grant Colleges in its 1966 report on the nation's needs in oceanography.⁷⁴ Pell's job was clear. He had to spend his energies working inside Congress, telephoning, writing and cajoling his colleagues so that the bill would be sped through before the session ended. Timing was impor-

tant because renewing interest after a long break would be difficult, and the Senator was up for re-election in 1966.

Running interference for S. 2439 in Congress involved jurisdictional problems, disagreements about organization and hassles with the Bureau of the Budget. The jurisdictional problem was more acute in the House than in the Senate. The first version of the bill was presented as an amendment to the National Science Foundation Act of 1950, which meant it would be referred to the Senate Committee on Labor and Public Welfare.

Sen. Magnuson, chairman of the Commerce Committee, the group generally recognized as responsible for marine programs, agreed to joint jurisdiction with Pell's committee because Pell was not a member of the Commerce Committee.⁷⁵ Pell still had jurisdictional problems, however, because he was not a member of Labor and Public Welfare's Education Subcommittee, to which his bill would be referred.⁷⁶ Chairman of the Labor Committee, Sen. Lister Hill of Alabama, solved the problem by naming a Special Subcommittee on Sea Grant Colleges, chaired by Pell.⁷⁷ Other members included Sens. Wayne Morse of Oregon, Edward Kennedy, Gaylord Nelson of Wisconsin, Jacob Javits of New York, and George Murphy of California.⁷⁸

In the House the problem was not solved as easily. A companion bill dealing with NSF would be referred to the Science and Astronautics Committee, a body that had been trying to control oceanographic matters since the late fifties. Four such bills were introduced in January 1966,⁷⁹ following the Rhode Island conference.

Knauss' Sea Grant Committee and Pell's contacts had indeed stimulated congressional interest, and by mid-May, 10 bills had been introduced amending the NSF Act and creating Sea Grant Colleges. All the bills were referred to the Science and Astronautics Committee, where they "lay clustered on the Committee's table, unscheduled and unmoving, with a future about as dynamic as a barnacle's."⁸⁰

Senate Hearings

The Sea Grant idea had taken firm hold in the Senate, and Pell scheduled hearings on his bill for May 2-5, 1966. On the first day the subcommittee met at the University of Rhode Island, probably "the first time a senatorial hearing has been held at a university."⁸¹ Seven witnesses, all of whom backed the bill, appeared before the subcommittee. Pell's questions to the witnesses concerned the administrative location of the Sea Grant Program, as well as funding. He asked for opinions on locating the Program in the Smithsonian Institution rather than in NSF. Francis Horn replied

One of the difficulties in giving or placing the funds exclusively in the hands of the National Science Foundation revolves around the point that they give their financial support to the individual. There is a growing feeling that this has not always been in the best interest of science or the universities. I think it would be wise to find another agency.⁸²

About the question of funding levels, Horn pointed out that the \$17 million authorization was "peanuts compared to the budget for NASA which is \$6 billion" and recommended that funding not come exclusively from ten percent of offshore bonuses, rentals, leases and royalties, as specified in S. 2439, because it would limit the Program's growth.⁸³

Testifying on behalf of the National Sea Grant College Committee, Knauss stressed the need to provide funds on an institutional basis rather than through individual projects, using the agricultural base support as a point of reference. The Committee did not object to Pell's suggested source of funding.⁸⁴ Knauss also expressed the belief that "we are going to have sea grant colleges one way or another" and indicated that they were already emerging on university campuses. He hedged the question of an administrative base for the program but questioned whether NSF, in light of its tradition of basic research, could assume an applied program such as Sea Grant.⁸⁵ This point was raised repeatedly during the hearings

and in conference committee sessions in the House. During the May 2 hearing in Rhode Island, no one expressed enthusiasm for placing Sea Grant in NSF.

On the following day the subcommittee reconvened in the new Senate Office Building in Washington for three days of testimony. During these sessions 25 witnesses, representing government, industry, Congress and universities, appeared before the group. Immediately, the bureaucratic placement of Sea Grant became an issue.

Thomas F. Bates, the Department of the Interior's science advisor, was the first witness. He closed his remarks by stating that

...we support the purposes of the sea grant college bill. We recognize the desirability of more extensive participation in marine resources development by colleges and universities. We believe that the National Science Foundation should increase its support of basic research and scientific education in areas of oceanographic activity; and that major responsibility for programs aimed at exploiting marine resources should continue to be vested in the Department of Interior.⁸⁶

Bates argued that Interior was more oriented toward applied science and engineering than NSF and pointed to the new Interior program of Water Resources Research, which carried out programs through land grant institutions in all the states.⁸⁷

Throughout the hearings, Pell returned to the idea of placing Sea Grant in the Smithsonian because its "certain tradition of nurturing and spinning off government groups, organizations actually, might be suitable to handle it on a temporary basis and then see where it would go on a more permanent basis."⁸⁸

Pell later remarked to Rep. Rogers, who had appeared to support the bill,

From the testimony of the Department of Interior witness, I can see a certain avariciousness on the part of Government agencies in handling a program that looks to have the potential for growth that this has. I think we must make a very sound decision in the beginning.⁸⁹

Randal Robertson, associate director for research at NSF, testified that "the Foundation considers that it should not be assigned responsibility for activities involving the development of practical systems for exploitation of the marine environment."⁹⁰ He felt that role should be played by the private sector. He admitted under questioning that the Sea Grant bill would extend NSF's responsibility to include applied research in addition to its traditional basic research mandate.⁹¹ Frustrated by Robertson's responses, Pell remarked, "I am not sure that your purposes are terribly important to the national interests but are a little bit too high or esoteric, somewhat like asking a portrait painter to be a wall painter."⁹²

Robertson also raised the issue of matching funds for Sea Grant. He rejected the offshore royalty idea, arguing that

... the National Science Foundation should work closely with the State governments in this development, and that a "sea grant institution" should be the fruit of an agreement between the Federal government and the State, in which the State agrees to commit some of its resources to the program.⁹³

The ICO favored the NSF administration of Sea Grant.⁹⁴ Pell questioned Capt. Edward Snyder, who represented ICO Chairman Morse, about the Bureau of the Budget's feelings about the bill. Snyder had also brought up the matter of matching funds, and Pell was anxious to know if the Bureau was in agreement. He asked Snyder if changing the bill to reflect the points raised in the ICO statement would satisfy the Bureau. Snyder said that it would.⁹⁵ As the Executive branch's spearhead for marine matters, the ICO testimony supporting the bill was critical to its passage.

Along with the debate over agency administration and funding, frequent references to Magnuson's S. 944 were made. Agencies and congressmen expected the matter of organization and coordination to be taken care of once S. 944 was signed. Any agreement on Sea Grant's administration was discussed as "temporary."⁹⁶

During Spilhaus' testimony, Pell introduced the matter of an outside advisory body on Sea Grant that would also report to the President and Congress. Spilhaus replied, "...any device... that keeps people stimulated, excited, and informed about our program of colonizing the sea, I am for."⁹⁷

On the question of matching funds, Spilhaus had mixed reactions. He could see the advantage of state funding, but he also warned the Subcommittee that matching funds might be difficult for institutions in "poorer circumstances."⁹⁸

The total amount of funding needed for a National Sea Grant College Program was another major issue. One idea was to have small base grants on a formula basis supplemented by grants to a few universities that were leaders in marine affairs.⁹⁹ Another suggestion was an equal amount for each state.¹⁰⁰

In addition to testimony from witnesses, the record of Sea Grant hearings contained statements from 41 people and letters from 28 others.

After the hearings, problems remained. *Science* magazine reported that perhaps the most difficult problem was "development of criteria for distributing the not-too-plentiful funds (for the first three years, there would be \$10, \$15 and \$20 million authorizations) in such a way as to have significant impact."¹⁰¹

For this and other reasons, the bill was expected only to clear the Senate and Labor and Public Welfare Committee before the end of the 89th Congress. There was little hope for House action.¹⁰² The only bright spot was Pell's own reputation, of which *Science* reported, "Though not one of the Senate's luminaries, Pell has shown a doggedness that on



Sen. Claiborne Pell

"There are certain guidelines to winning passage of any Federal legislation, and Senator Claiborne Pell (Rhode Island) who fathered the Sea Grant Bill, knows them well,"

said Pell's special assistant Fitzhugh Green.

Photo courtesy of Library of Congress.

several occasions has paid off."¹⁰³ Pell's immediate problem was to move the bill through the House without having it snagged by the Science and Astronautics Committee.

Congressional Strategy

A day or two after the Senate hearings Pell called Spilhaus and asked him for ideas about who should carry the bill in the House. Remembering his exchange with Rogers in 1964, Spilhaus suggested Paul Rogers of Florida. Rogers' response was H.R. 15192, introduced on May 19 as an amendment to the Merchant Marine Act of 1936 instead of to the NSF Act. This assured referral to the House Merchant Marine and Fisheries Committee instead of Science and Astronautics.¹⁰⁴

Pell and Rogers agreed on a joint strategy that included a speedy one-day hearing on H.R. 15192 on June 13 after Reps. Edward Garmatz, chairman of the House Merchant Marine Committee, and Alton Lennon, chairman of the Subcommittee on Oceanography, had introduced identical bills.¹⁰⁵

On July 26, Rogers submitted a new Sea Grant Bill, H.R. 16559, amending the new Marine Resources and Engineering Development Act of 1966, Magnuson's S. 944. The new law presented a welcome solution to the jurisdictional problem with the Science and Astronautics Committee. It was reported favorably by the House Merchant Marine Committee the following day.¹⁰⁶ After a minor delay by the Rules Committee, which controls traffic in the House, H.R. 16559 unanimously passed the House on September 13.

Pell and Rogers had carefully planned that S. 2439 be passed first by the House. Had it passed the Senate first, it — like the other Sea Grant House bills amending the NSF Act — would have been referred to the House Science and Astronautics Committee. Too many Sea Grant bills had already been becalmed there for Pell to risk another such referral.

As soon as H.R. 16559 reached the Senate, Pell asked for unanimous consent that the language of S. 2439 be substituted for the language of H.R. 16559. There were no objections. On September 14 the Rogers bill was returned to the House in the Pell bill form.¹⁰⁷

While the House strategy was working itself out, Pell followed up on his discussions with ICO representatives. He needed the Administration to agree not to contest the bill. His special assistant, Fitzhugh Green, reported that "sentiment was running against oceanography. The Magnuson Bill "...was receiving neither endorsement nor permissiveness from the White House."¹⁰⁸ Pell found one senior White House assistant who liked the idea, and after meeting with staff members of the Bureau of the Budget and making language and substantive changes, the Bureau issued a letter that they had no objections.¹⁰⁹

By this time S. 2439 had acquired five co-sponsors. On June 16, Sens. Javits, Kennedy, Morse, Murphy and Nelson, all members of Pell's Special Subcommittee on Sea Grant, had joined Pell. The bill was going to the entire Labor and Public Welfare Committee. It was doubtful that a bill could get through the complicated Senate mechanism in one session, but Pell's persistence never ceased, and the bill was placed on the Committee's June 24 agenda. An earlier attempt had been aborted by a call for a Senate floor count, but this time it was unanimously approved. The next step was the Rogers maneuver in the House.¹¹⁰

Differences of Opinion

Rogers requested a joint conference about the Rogers bill that the Senate had sent to the House in Pell form. There were about two dozen differences between the bills.

The House bill proposed a new Title II to the new Marine Resources and Engineering Act of 1966 (Pub. L. 89-454) to provide for the establishment of a program of Sea Grant Colleges and education, training and research in marine



Rep. Paul Rogers

When asked who should carry the Sea Grant bill in the House, Spilhaus replied "Paul Rogers of Florida." The Pell/Rogers team produced straightforward legislation, signed by President Johnson only 14 months after its introduction in the Senate.

Photo by Fabian Bachrach, courtesy of Library of Congress.

science, engineering and related disciplines, to be administered by NSF. Authorization was limited to two years, not to exceed \$5 million in 1967 nor \$10 million in 1968. "Suitable public or private institutions of higher education, institutes, and laboratories" engaged in or concerned with marine resource development activities would receive grants or contracts to carry out the purposes of the Act. The Act directed NSF to work with all Federal departments and agencies interested in or affected by the bill. It also required the new National Council on Marine Resources and Engineering to advise NSF and to provide policy guidance with respect to activities carried out under H.R. 16559.¹¹¹

The Senate bill would establish similar programs by amending the NSF Act of 1950, but it was authorized for three years, not to exceed \$10 million in 1967, \$15 million in 1968 nor \$20 million in 1969. Under S. 2439, recipients of Sea Grants could be "public or private agencies, public or private institutions of higher education, museums, foundations, industries, laboratories, corporations, organizations or groups of individuals" engaged in or concerned with marine resources development. It also required federal coordination but added to those cited in H.R. 16559 the U.S. Office of Education. It created a citizens' National Advisory Council of Sea Grant Colleges and Programs to be appointed by the President.¹¹²

The House named Reps. Rogers, Lennon, Gilbert, Mosher and Pelly to meet with Senate conferees Pell, Morse, Kennedy, Javits, Murphy and Fong.¹¹³ On September 27, 1966, the conference committee met in a long executive session and reached agreement. Just as the group was leaving, Green reported that an administrative official had telephoned Pell in the conference room to report a suggestion from the U.S. Mission to the United Nations: "Invite foreign oceanology institutes to participate in the Sea Grant Program."¹¹⁴ The idea was deferred.

The Amended Bill

The conference report was filed on September 29, adopted by the Senate on September 30 and by the House on October 4. The bill amended Pub. L. 89-454, the Marine Resources and Engineering Act.

Pell had lost the battle for three-year authorization. The new version authorized \$5 million in 1967 and \$15 million in 1968, but it contained the promise of "such sums as the Congress may specifically authorize by law" for subsequent years, thereby not specifically limiting the program to a two- or three-year period.¹¹⁵

A separate citizens' Advisory Committee was eliminated, and instead the National Council on Marine Resources and Engineering Development, created under Title I of Pub. L. 89-454, was to submit an annual report on its activities and recommendations on policy guidance.

Under the revised Act, grants and contracts would go to "suitable public or private institutions of higher education, institutes, laboratories, and public or private agencies," giving NSF the necessary administrative flexibility it might need in the future.¹¹⁶ It was agreed, however, that initial programs would emphasize institutions of higher education.

The question of sources of funds had already been considered in the Senate Subcommittee mark-up so that the Senate and House bills both stipulated a matching-funds arrangement. The idea to use royalties from offshore leases and rentals had been dropped. The federal matching portion would be two-thirds, with the remaining one-third to come from non-federal sources. Both bills limited total support to any one state to 15 percent of the total amount appropriated in a given year.¹¹⁷

On October 5 the revised H.R. 16559 was presented to President Johnson, who signed it on October 15. The National Sea Grant College and Program Act became Pub. L. 89-688. It had moved through both Houses in a remarkably short time. Only 14 months had elapsed from the time Pell in-

roduced S. 2439 on August 19, 1965, until Johnson signed Rogers' H.R. 16559.

What had finally emerged was a flexible, workable document whose simple language is almost a textbook example of legislation. Testimony to its effectiveness was the position held in 1976 by the Sea Grant Association.¹¹⁸ That year, when the Act was due for reauthorization, an attempt was made in Congress to drastically alter the legislation, and the Sea Grant Association launched a widespread campaign to retain the Pell/Rogers language.

Sea Grant: The First 10 Years

After a decade, Sea Grant, conceived by Spilhaus in 1963 and formalized by the Pell/Rogers Act in 1966, had become an important university program. The experiences of that decade are proof that some of the concerns expressed during thousands of hours both in and out of Congress were not ill-founded.

Pell's hopes to train technicians and to improve the skills of fishermen had become a reality on every U.S. coast. His wish to promote public awareness of marine resources had become a basic component of all Sea Grant Programs. His plan for "centers of excellence" had been implemented by the designation of 11 Sea Grant Colleges: the Universities of Washington, Rhode Island, Wisconsin, Hawaii, North Carolina and Delaware; Texas A&M University, Oregon State University, the State University of New York with Cornell, the University of California System and the Florida State University System. Although the final legislation eliminated Pell's citizen's advisory committee, the purpose of such a group was served by the National Sea Grant Panel, an outside group of experts in marine resources that provided policy guidance to the director of the National Sea Grant Program. Aquaculture, called for by legislative mandate, had taken giant steps forward under Sea Grant support and sponsorship.

All the dreams had not come true, however. Spilhaus' hope for ocean engineering still waited to be answered, and the expected new technology was minimal. These disappoint-

ments stemmed in part from insufficient federal funding, which worried the Pell/Rogers team from the beginning. In 1975, \$21.1 million was appropriated for Sea Grant, only \$1 million more than Pell had recommended for 1969. Although the Bureau of the Budget agreed not to oppose the Act in 1966, it had not guaranteed its support.

Ten years after it was born, the Sea Grant Program still had administrative problems. These, of course, had not gone unforeseen by the Act's authors. The question of where to locate the Program had been raised repeatedly, and Pell felt a need to "make a sound decision in the beginning" concerning the Program's management.¹¹⁹

Sea Grant's home in NSF was temporary. In 1970, the Program became part of NOAA (the National Oceanic and Atmospheric Administration), created in a reorganization effort led by President Richard M. Nixon. NOAA was expected to create a lead agency that would cement the fragmented federal ocean programs. Marine-related research and education still existed in 1976 in the same agencies in which they existed more than a decade earlier. Sea Grant was the only unit of NOAA whose major mission related to universities, and this difference in thrusts created problems within NOAA. The hope for a central agency with authority and strength was the basis for the Marine Resources and Engineering Development Act of 1966, but it was still unfulfilled. For Sea Grant, the lack of such an agency created uneasiness.

The distribution of Sea Grant funds, a topic swept under the rug after the Rhode Island conference and the Senate hearings, was still a major factor in the Program's development. Like the engineering and technology problem, distribution of funds would have been more easily tackled if more funds had been available. In retrospect, a percentage of revenues from offshore leases, royalties and rents would have provided the continuity of funding that Sea Grant lacked.

Other expected roles for Sea Grant had been assumed by other federal agencies. Some, such as the establishment of Coastal Zone Laboratories through the National Sea Grant

Program,¹²⁰ were assigned to other units of NOAA. This whittling away of the original scope of the Program and assignment of those functions to other agencies may have been the most disappointing aspect of Sea Grant's early development.

On the other hand, mission agencies that had traditionally assigned part of their appropriations to university contracts or grants now expected Sea Grant to provide university funding. Pell's "poor little chicken" was being sliced into even smaller pieces.

Francis Horn's fear had not been allayed, even though the Sea Grant legislation gave NSF a broader mandate to work with applied science rather than confining itself to basic research. He worried that the NSF tradition of providing grants on an individual basis would defeat the purpose of the concept — to provide broad-based support for creation of "centers of excellence." Even after Sea Grant had been moved from NSF to NOAA, certain practices, established under NSF, remained. Although the Program provided "institutional" support, it actually funded projects individually.

The matching funds arrangements set out in the Act had produced certain state commitments, as was the Act's intent, but nationally, matching funds exceeded the required one-third by about 10 percent.¹²¹ Each year the partnership between the states and the federal government became more skewed in favor of the states, and states and universities grew concerned that the federal government was not living up to its two-thirds of the bargain.

The matching funds arrangement had not worked out as well for private institutions as it had for state universities. In 1966, C.P. Idyll of the University of Miami, a private institution, warned the Senate about this when he testified "If it were required that a certain proportion of matching dollars be put into the program, we would not be able to be a Sea Grant College."¹²² A decade later, Miami, which had received one of the first institutional Sea Grants, relinquished

its head start in the Program to the Florida State University System, Florida's state-supported land grant institution, partially because of the matching funds problem.

The international Sea Grant Program, an option raised by Abel at the Rhode Island conference¹²³ and suggested at the last minute to the Senate/House conference committee, had become part of the national Program. In 1974, when Sea Grant was due for reauthorization, Sen. Pell amended the act by adding a \$100,000 authorization to examine the international aspects of the National Sea Grant Program.

Although it failed to meet all the expectations expressed when the Sea Grant concept was being formalized, by 1976 the Program had attained widespread success through the creation of a network of colleges and universities in most coastal states. In research, Sea Grant had provided a model for translating the basic research knowledge found in universities into useful information and tools for "sea people." In education, it had supported courses and curricula to develop awareness of the marine environment, trained technicians and others needed by marine-related industries, and created new undergraduate and graduate courses and degree programs. In advisory services, it had sent field agents and specialists to work with and educate users of marine resources.

Athelstan Spilhaus had set into motion an idea of striking proportions. Sea Grant had become a powerful influence in the marriage between the federal government and the private sector, colleges and universities, and state agencies to promote education research and advisory services in developing marine resources in the United States.

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86. U.S. Cong., Senate, *Sea Grant Colleges*, p. 148.
87. U.S. Cong., Senate, *Sea Grant Colleges*, p. 151.
88. U.S. Cong., Senate, *Sea Grant Colleges*, pp. 196-165.
89. U.S. Cong., Senate, *Sea Grant Colleges*, p. 165.
90. U.S. Cong., Senate, *Sea Grant Colleges*, p. 167.
91. U.S. Cong., Senate, *Sea Grant Colleges*, p. 171.
92. U.S. Cong., Senate, *Sea Grant Colleges*, p. 171.
93. U.S. Cong., Senate, *Sea Grant Colleges*, p. 168.
94. U.S. Cong., Senate, *Sea Grant Colleges*, p. 185.
95. U.S. Cong., Senate, *Sea Grant Colleges*, p. 186.
96. U.S. Cong., Senate, *Sea Grant Colleges*, p. 199.
97. U.S. Cong., Senate, *Sea Grant Colleges*, p. 200.
98. U.S. Cong., Senate, *Sea Grant Colleges*, p. 198.
99. U.S. Cong., Senate, *Sea Grant Colleges*, p. 235.
100. U.S. Cong., Senate, *Sea Grant Colleges*, p. 221.
101. Luther J. Carter, "Sea Grant Colleges: Idea Gains Adherents," *Science*, Vol. 152, June 1966, p. 1349.
102. Carter, p. 1348.
103. Carter, p. 1360.
104. U.S. Cong., House, *H.R. 15192*, 89th Congress, 2nd Session (Washington, D.C.), May 23, 1966.
105. U.S. Cong., House, *Abridged Chronology*, p. 14.
106. Albert M. Perry, Letter to Sen. Claiborne Pell, May 12, 1967.
107. Green, p. 24.
108. Green, p. 23.
109. Green, p. 23.
110. Green, p. 24.

111. U.S. Cong., House, *H.R. 16559*, 89th Congress, 2nd Session, July 26, 1966.
112. U.S. Cong., House, *Conference Report, National Sea Grant College and Program Act of 1966*, (Washington, D.C.: GPO, September 29, 1966), p. 7.
113. U.S. Cong., House, *Abridged Chronology*, p. 15.
114. Green, p. 25.
115. Pub. L. 89-688.
116. Pub. L. 89-688.
117. Pub. L. 89-688.
118. The Sea Grant Association, created in 1969 to further the Sea Grant Concept, is composed primarily of representatives of universities supported under the Act.
119. U.S. Cong., Senate, *Sea Grant Colleges*, p. 165.
120. Commission on Marine Science, Engineering and Resources. *Our Nation and the Sea*, (Washington, D.C.: GPO, 1969, p. 29.
121. Personal interview with Robert Abel, July 29, 1976.
122. U.S. Cong., Senate, *Sea Grant Colleges*, p. 245.
123. Difford, p. 69.

National Sea Grant College and Program Act of 1966

Public Law 89-688

AN ACT

October 15, 1966
[H. R. 16550]

To amend the Marine Resources and Engineering Development Act of 1966 to authorize the establishment and operation of sea grant colleges and programs by initiating and supporting programs of education and research in the various fields relating to the development of marine resources, and for other purposes.

National Sea
Grant College
and Program Act
of 1966.
Ante, p. 203.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Marine Resources and Engineering Development Act of 1966 is amended by adding at the end thereof the following new title:

"TITLE II—SEA GRANT COLLEGES AND PROGRAMS

"SHORT TITLE

"Sec. 201. This title may be cited as the 'National Sea Grant College and Program Act of 1966'.

"DECLARATION OF PURPOSE

"Sec. 202. The Congress hereby finds and declares—

"(a) that marine resources, including animal and vegetable life and mineral wealth, constitute a far-reaching and largely untapped asset of immense potential significance to the United States; and

"(b) that it is in the national interest of the United States to develop the skilled manpower, including scientists, engineers, and technicians, and the facilities and equipment necessary for the exploitation of these resources; and

"(c) that aquaculture, as with agriculture on land, and the gainful use of marine resources can substantially benefit the United States, and ultimately the people of the world, by providing greater economic opportunities, including expanded employment and commerce; the enjoyment and use of our marine resources; new sources of food; and new means for the development of marine resources; and

"(d) that Federal support toward the establishment, development, and operation of programs by sea grant colleges and Federal support of other sea grant programs designed to achieve the gainful use of marine resources, offer the best means of promoting programs toward the goals set forth in clauses (a), (b), and (c), and should be undertaken by the Federal Government; and

"(e) that in view of the importance of achieving the earliest possible institution of significant national activities related to the development of marine resources, it is the purpose of this title to provide for the establishment of a program of sea grant colleges and education, training, and research in the fields of marine science, engineering, and related disciplines.

"GRANTS AND CONTRACTS FOR SEA GRANT COLLEGES AND PROGRAMS

"Sec. 203. (a) The provisions of this title shall be administered by the National Science Foundation (hereafter in this title referred to as the 'Foundation'). Administration
by National
Science Founda-
tion.

"(b) (1) For the purpose of carrying out this title, there is authorized to be appropriated to the Foundation for the fiscal year ending June 30, 1967, not to exceed the sum of \$5,000,000, for the fiscal year ending June 30, 1968, not to exceed the sum of \$15,000,000, and for each subsequent fiscal year only such sums as the Congress may hereafter specifically authorize by law.

"(2) Amounts appropriated under this title are authorized to remain available until expended.

"MARINE RESOURCES

"Sec. 204. (a) In carrying out the provisions of this title the Foundation shall (1) consult with those experts engaged in pursuits in the various fields related to the development of marine resources and with all departments and agencies of the Federal Government (including the United States Office of Education in all matters relating to education) interested in, or affected by, activities in any such fields, and (2) seek advice and counsel from the National Council on Marine Resources and Engineering Development as provided by section 205 of this title.

"(b) The Foundation shall exercise its authority under this title by— Research pro-
grams, etc.

"(1) initiating and supporting programs at sea grant colleges and other suitable institutes, laboratories, and public or private agencies for the education of participants in the various fields relating to the development of marine resources;

"(2) initiating and supporting necessary research programs in the various fields relating to the development of marine resources, with preference given to research aimed at practices, techniques, and design of equipment applicable to the development of marine resources; and

"(3) encouraging and developing programs consisting of instruction, practical demonstrations, publications, and otherwise, by sea grant colleges and other suitable institutes, laboratories, and public or private agencies through marine advisory programs with the object of imparting useful information to persons currently employed or interested in the various fields related to the development of marine resources, the scientific community, and the general public.

"(c) Programs to carry out the purposes of this title shall be accomplished through contracts with, or grants to, suitable public or private institutions of higher education, institutes, laboratories, and public or private agencies which are engaged in, or concerned with, activities in the various fields related to the development of marine resources, for the establishment and operation by them of such programs. Contracts or
grants.

"(d) (1) The total amount of payments in any fiscal year under any grant to or contract with any participant in any program to be carried out by such participant under this title shall not exceed 66 $\frac{2}{3}$ per centum of the total cost of such program. For purposes of computing the amount of the total cost of any such program furnished by any participant in any fiscal year, the Foundation shall include in such computation an amount equal to the reasonable value of any buildings, facilities, equipment, supplies, or services provided by such partici-

Disposition of
funds, restrictions.

pant with respect to such program (but not the cost or value of land or of Federal contributions).

"(2) No portion of any payment by the Foundation to any participant in any program to be carried out under this title shall be applied to the purchase or rental of any land or the rental, purchase, construction, preservation, or repair of any building, dock, or vessel.

"(3) The total amount of payments in any fiscal year by the Foundation to participants within any State shall not exceed 15 per centum of the total amount appropriated to the Foundation for the purposes of this title for such fiscal year.

"(e) In allocating funds appropriated in any fiscal year for the purposes of this title the Foundation shall endeavor to achieve maximum participation by sea grant colleges and other suitable institutes, laboratories, and public or private agencies throughout the United States, consistent with the purposes of this title.

"(f) In carrying out its functions under this title, the Foundation shall attempt to support programs in such a manner as to supplement and not duplicate or overlap any existing and related Government activities.

"(g) Except as otherwise provided in this title, the Foundation shall, in carrying out its functions under this title, have the same powers and authority it has under the National Science Foundation Act of 1950 to carry out its functions under that Act.

"(h) The head of each department, agency, or instrumentality of the Federal Government is authorized, upon request of the Foundation, to make available to the Foundation, from time to time, on a reimbursable basis, such personnel, services, and facilities as may be necessary to assist the Foundation in carrying out its functions under this title.

64 Stat. 149,
42 USC 1861
note.
Personnel, fa-
cilities, etc.,
availability.

Definitions.

"(i) For the purposes of this title—

"(1) the term 'development of marine resources' means scientific endeavors relating to the marine environment, including, but not limited to, the fields oriented toward the development, conservation, or economic utilization of the physical, chemical, geological, and biological resources of the marine environment; the fields of marine commerce and marine engineering; the fields relating to exploration or research in, the recovery of natural resources from, and the transmission of energy in, the marine environment; the fields of oceanography and oceanology; and the fields with respect to the study of the economic, legal, medical, or sociological problems arising out of the management, use, development, recovery, and control of the natural resources of the marine environment;

"(2) the term 'marine environment' means the oceans; the Continental Shelf of the United States; the Great Lakes; the seabed and subsoil of the submarine areas adjacent to the coasts of the United States to the depth of two hundred meters, or beyond that limit, to where the depths of the superjacent waters admit of the exploitation of the natural resources of the area; the seabed and subsoil of similar submarine areas adjacent to the coasts of islands which comprise United States territory; and the natural resources thereof;

"(3) the term 'sea grant college' means any suitable public or private institution of higher education supported pursuant to the purposes of this title which has major programs devoted to increasing our Nation's utilization of the world's marine resources; and

"(4) the term 'sea grant program' means (A) any activities of education or research related to the development of marine resources supported by the Foundation by contracts with or grants to institutions of higher education either initiating, or developing existing, programs in fields related to the purposes of this title, (B) any activities of education or research related to the development of marine resources supported by the Foundation by contracts with or grants to suitable institutes, laboratories, and public

or private agencies, and (C) any programs of advisory services oriented toward imparting information in fields related to the development of marine resources supported by the Foundation by contracts with or grants to suitable institutes, laboratories, and public or private agencies.

"ADVISORY FUNCTIONS

"Sec. 205. The National Council on Marine Resources and Engineering Development established by section 3 of title I of this Act shall, as the President may request— *Ante, p. 204.*

"(1) advise the Foundation with respect to the policies, procedures, and operations of the Foundation in carrying out its functions under this title;

"(2) provide policy guidance to the Foundation with respect to contracts or grants in support of programs conducted pursuant to this title, and make such recommendations thereon to the Foundation as may be appropriate; and

"(3) submit an annual report on its activities and its recommendations under this section to the Speaker of the House of Representatives, the Committee on Merchant Marine and Fisheries of the House of Representatives, the President of the Senate, and the Committee on Labor and Public Welfare of the Senate." *Report to Congress.*

Sec. 2. (a) The Marine Resources and Engineering Development Act of 1966 is amended by striking out the first section and inserting in lieu thereof the following: *Ante, p. 203.*

"TITLE I—MARINE RESOURCES AND ENGINEERING DEVELOPMENT

"SHORT TITLE

"SECTION 1. This title may be cited as the 'Marine Resources and Engineering Development Act of 1966'." *Citation of title I.*

(b) Such Act is further amended by striking out "this Act" the first place it appears in section 4(a), and also each place it appears in sections 5(a), 8, and 9, and inserting in lieu thereof in each such place "this title".

Approved October 15, 1966.

Sea Grant Program Improvement Act of 1976

Public Law 94-461
94th Congress

An Act

Oct. 8, 1976
[H.R. 13035]

Sea Grant
Program
Improvement
Act of 1976.
33 USC 1121
note.

National
Sea Grant
Program Act.
33 USC 1121
note.
33 USC 1121.

To improve the national sea grant program and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Sea Grant Program Improvement Act of 1976".

SEC. 2. AMENDMENT TO THE NATIONAL SEA GRANT COLLEGE AND PROGRAM ACT OF 1966.

Title II of the Marine Resources and Engineering Development Act of 1966 (33 U.S.C. 1101 et seq.) is amended to read as follows:

"TITLE II—NATIONAL SEA GRANT PROGRAM

"SEC. 201. SHORT TITLE.

"This title may be cited as the 'National Sea Grant Program Act'.

"SEC. 202. DECLARATION OF POLICY.

"(a) FINDINGS.—The Congress finds and declares the following:

"(1) The vitality of the Nation and the quality of life of its citizens depend increasingly on the understanding, assessment, development, utilization, and conservation of ocean and coastal resources. These resources supply food, energy, and minerals and contribute to human health, the quality of the environment, national security, and the enhancement of commerce.

"(2) The understanding, assessment, development, utilization, and conservation of such resources require a broad commitment and an intense involvement on the part of the Federal Government in continuing partnership with State and local governments, private industry, universities, organizations, and individuals concerned with or affected by ocean and coastal resources.

"(3) The National Oceanic and Atmospheric Administration, through the national sea grant program, offers the most suitable locus and means for such commitment and involvement through the promotion of activities that will result in greater such understanding, assessment, development, utilization, and conservation. Continued and increased Federal support of the establishment, development, and operation of programs and projects by sea grant colleges, sea grant regional consortia, institutions of higher education, institutes, laboratories, and other appropriate public and private entities is the most cost-effective way to promote such activities.

"(b) **OBJECTIVE.**—The objective of this title is to increase the understanding, assessment, development, utilization, and conservation of the Nation's ocean and coastal resources by providing assistance to promote a strong educational base, responsive research and training activities, and broad and prompt dissemination of knowledge and techniques.

"(c) **PURPOSE.**—It is the purpose of the Congress to achieve the objective of this title by extending and strengthening the national sea grant program, initially established in 1966, to promote research, education, training, and advisory service activities in fields related to ocean and coastal resources.

SEC. 203. DEFINITIONS.

"As used in this title—

33 USC 1122.

"(1) The term 'Administration' means the National Oceanic and Atmospheric Administration.

"(2) The term 'Administrator' means the Administrator of the National Oceanic and Atmospheric Administration.

"(3) The term 'Director' means the Director of the national sea grant program, appointed pursuant to section 204(b).

"(4) The term 'field related to ocean and coastal resources' means any discipline or field (including marine science (and the physical, natural, and biological sciences, and engineering, included therein), marine technology, education, economics, sociology, communications, planning, law, international affairs, and public administration) which is concerned with or likely to improve the understanding, assessment, development, utilization, or conservation of ocean and coastal resources.

"(5) The term 'includes' and variants thereof should be read as if the phrase 'but is not limited to' were also set forth.

"(6) The term 'marine environment' means the coastal zone, as defined in section 304(1) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453(1)); the seabed, subsoil, and waters of the territorial sea of the United States; the waters of any zone over which the United States asserts exclusive fishery management authority; the waters of the high seas; and the seabed and subsoil of and beyond the outer Continental Shelf.

"(7) The term 'ocean and coastal resource' means any resource (whether living, nonliving, manmade, tangible, intangible, actual, or potential) which is located in, derived from, or traceable to, the marine environment. Such term includes the habitat of any such living resource, the coastal space, the ecosystems, the nutrient-rich areas, and the other components of the marine environment which contribute to or provide (or which are capable of contributing to or providing) recreational, scenic, esthetic, biological, habitation, commercial, economic, or conservation values. Living resources include natural and cultured plant life, fish, shellfish, marine mammals, and wildlife. Nonliving resources include energy sources, minerals, and chemical substances.

"(8) The term 'panel' means the sea grant review panel established under section 209.

"(9) The term 'person' means any individual; any public or private corporation, partnership, or other association or entity (including any sea grant college, sea grant regional consortium, institution of higher education, institute, or laboratory); or any State, political subdivision of a State, or agency or officer thereof.

"(10) The term 'sea grant college' means any public or private institution of higher education which is designated as such by the Secretary under section 207.

"(11) The term 'sea grant program' means any program which —

"(A) is administered by any sea grant college, sea grant regional consortium, institution of higher education, institute, laboratory, or State or local agency; and

"(B) includes two or more projects involving one or more of the following activities in fields related to ocean and coastal resources:

- "(i) research,
- "(ii) education,
- "(iii) training, or
- "(iv) advisory services.

"(12) The term 'sea grant regional consortium' means any association or other alliance which is designated as such by the Secretary under section 207.

"(13) The term 'Secretary' means the Secretary of Commerce.

"(14) The term 'State' means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Mariana Islands, or any other territory or possession of the United States.

"SEC. 204. NATIONAL SEA GRANT PROGRAM.

33 USC 1123.

Planning
guidelines and
priorities.

"(a) IN GENERAL.—The Secretary shall maintain, within the Administration, a program to be known as the national sea grant program. The national sea grant program shall consist of the financial assistance and other activities provided for in this title. The Secretary shall establish long-range planning guidelines and priorities for, and adequately evaluate, this program.

"(b) DIRECTOR.—(1) The Secretary shall appoint a Director of the national sea grant program who shall be a qualified individual who has—

"(A) knowledge or expertise in fields related to ocean and coastal resources; and

"(B) appropriate administrative experience.

"(2) The Director shall be appointed and compensated, without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, at a rate not in excess of the maximum rate for GS-18 of the General Schedule under section 5332 of such title.

5 USC 3301
et seq.

5 USC 5332
note.

"(c) DUTIES.—The Director shall administer the national sea grant program subject to the supervision of the Secretary and the Administrator. In addition to any other duty prescribed by law or assigned by the Secretary, the Director shall—

"(1) apply the long-range planning guidelines and the priorities established by the Secretary under subsection (a);

"(2) advise the Administrator with respect to the expertise and capabilities which are available within or through the national sea grant program, and provide (as directed by the Administrator) those which are or could be of use to other offices and activities within the Administration;

"(3) evaluate activities conducted under grants and contracts awarded pursuant to sections 205 and 206 to assure that the objective set forth in section 202(b) is implemented;

"(4) encourage other Federal departments, agencies, and instrumentalities to use and take advantage of the expertise and capabilities which are available through the national sea grant program, on a cooperative or other basis;

"(5) advise the Secretary on the designation of sea grant colleges and sea grant regional consortia and, in appropriate cases, if any, on the termination or suspension of any such designation; and

"(6) encourage the formation and growth of sea grant programs.

"(d) POWERS. To carry out the provisions of this title, the Secretary may

"(1) appoint, assign the duties, transfer, and fix the compensation of such personnel as may be necessary, in accordance with the civil service laws; except that five positions may be established

without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, but the pay rates for such positions may not exceed the maximum rate for GS-18 of the General Schedule under section 5332 of such title;

"(2) make appointments with respect to temporary and intermittent services to the same extent as is authorized by section 3109 of title 5, United States Code;

"(3) publish or arrange for the publication of, and otherwise disseminate, in cooperation with other services, offices, and programs in the Administration, any information of research, educational, training, and other value in fields related to ocean and coastal resources and with respect to ocean and coastal resources, without regard to section 501 of title 44, United States Code;

"(4) enter into contracts, cooperative agreements, and other transactions without regard to section 3709 of the Revised Statutes of the United States (41 U.S.C. 5);

"(5) accept donations and voluntary and uncompensated services, notwithstanding section 3679 of the Revised Statutes of the United States (31 U.S.C. 665(b)); and

"(6) issue such rules and regulations as may be necessary and appropriate.

"SEC. 205. CONTRACTS AND GRANTS.

"(a) **IN GENERAL.**—The Secretary may make grants and enter into contracts under this subsection to assist any sea grant program or project if the Secretary finds that such program or project will—

"(1) implement the objective set forth in section 202(b); and

"(2) be responsive to the needs or problems of individual States or regions.

The total amount paid pursuant to any such grant or contract may equal 66⅔ percent, or any lesser percent, of the total cost of the sea grant program or project involved.

"(b) **SPECIAL GRANTS.**—The Secretary may make special grants under this subsection to implement the objective set forth in section 202(b). The amount of any such grant may equal 100 percent, or any lesser percent, of the total cost of the project involved. No grant may be made under this subsection unless the Secretary finds that—

"(1) no reasonable means is available through which the applicant can meet the matching requirement for a grant under subsection (a);

"(2) the probable benefit of such project outweighs the public interest in such matching requirement; and

"(3) the same or equivalent benefit cannot be obtained through the award of a contract or grant under subsection (a) or section 206.

The total amount which may be provided for grants under this subsection during any fiscal year shall not exceed an amount equal to 1 percent of the total funds appropriated for such year pursuant to section 212.

"(c) **ELIGIBILITY AND PROCEDURE.**—Any person may apply to the Secretary for a grant or contract under this section. Application shall be made in such form and manner, and with such content and other submissions, as the Secretary shall by regulation prescribe. The Secretary shall act upon each such application within 6 months after the date on which all required information is received.

"(d) **TERMS AND CONDITIONS.**—(1) Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in paragraphs (2), (3), and (4) and to such other terms, conditions, and requirements as the Secretary deems necessary or appropriate.

"(2) No payment under any grant or contract under this section may be applied to—

5 USC 3301
et seq.

5 USC 5332
note.

Publication.

Rules and
regulations.

33 USC 1124.

Application.

	“(A) the purchase or rental of any land; or “(B) the purchase, rental, construction, preservation, or repair of any building, dock, or vessel; except that payment under any such grant or contract may, if approved by the Secretary, be applied to the purchase, rental, construction, preservation, or repair of non-self-propelled habitats, buoys, platforms, and other similar devices or structures, or to the rental of any research vessel which is used in direct support of activities under a ny sea grant program or project.
Record retention.	“(3) The total amount which may be obligated for payment pursuant to grants made to, and contracts entered into with, persons under this section within any one State in any fiscal year shall not exceed an amount equal to 15 percent of the total funds appropriated for such year pursuant to section 212.
Regulation.	“(4) Any person who receives or utilizes any proceeds of any grant or contract under this section shall keep such records as the Secretary shall by regulation prescribe as being necessary and appropriate to facilitate effective audit and evaluation, including records which fully disclose the amount and disposition by such recipient of such proceeds, the total cost of the program or project in connection with which such proceeds were used, and the amount, if any, of such cost which was provided through other sources. Such records shall be maintained for 3 years after the completion of such a program or project. The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access, for the purpose of audit and evaluation, to any books, documents, papers, and records of receipts which, in the opinion of the Secretary or of the Comptroller General, may be related or pertinent to such grants and contracts.
Audit.	
33 USC 1125. Grants and contracts.	“SEC. 206. NATIONAL PROJECTS. “(a) IN GENERAL.—The Secretary shall identify specific national needs and problems with respect to ocean and coastal resources. The Secretary may make grants or enter into contracts under this section with respect to such needs or problems. The amount of any such grant or contract may equal 100 percent, or any lesser percent, of the total cost of the project involved.
Application.	“(b) ELIGIBILITY AND PROCEDURE.—Any person may apply to the Secretary for a grant or contract under this section. In addition, the Secretary may invite applications with respect to specific national needs or problems identified under subsection (a). Application shall be made in such form and manner, and with such content and other submissions, as the Secretary shall by regulation prescribe. The Secretary shall act upon each such application within 6 months after the date on which all required information is received. Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in section 205(d) (2) and (4) and to such other terms, conditions, and requirements as the Secretary deems necessary or appropriate. “(c) AUTHORIZATION FOR APPROPRIATIONS.—There is authorized to be appropriated for purposes of carrying out this section not to exceed \$5,000,000 for the fiscal year ending September 30, 1977. Such sums as may be appropriated pursuant to this subsection shall remain available until expended. The amounts obligated to be expended for the purposes set forth in subsection (a) shall not, in any fiscal year, exceed an amount equal to 10 percent of the sums appropriated for such year pursuant to section 212.
	“SEC. 207. SEA GRANT COLLEGES AND SEA GRANT REGIONAL CONSORTIA.
33 USC 1126.	“(a) DESIGNATION.—(1) The Secretary may designate— “(A) any institution of higher education as a sea grant college; and “(B) any association or other alliance of two or more persons (other than individuals) as a sea grant regional consortium.

"(2) No institution of higher education may be designated as a sea grant college unless the Secretary finds that such institution—

"(A) is maintaining a balanced program of research, education, training, and advisory services in fields related to ocean and coastal resources and has received financial assistance under section 205 of this title or under section 204(c) of the National Sea Grant College and Program Act of 1966;

33 USC 1124,
1123.

"(B) will act in accordance with such guidelines as are prescribed under subsection (b)(2); and

"(C) meets such other qualifications as the Secretary deems necessary or appropriate.

The designation of any institution as a sea grant college under the authority of such Act of 1966 shall, if such designation is in effect on the day before the date of the enactment of the Sea Grant Program Improvement Act of 1976, be considered to be a designation made under paragraph (1) so long as such institution complies with subparagraphs (B) and (C).

33 USC 1121
note.
Ante, p. 1961.

"(3) No association or other alliance of two or more persons may be designated as a sea grant regional consortium unless the Secretary finds that such association or alliance—

"(A) is established for the purpose of sharing expertise, research, educational facilities, or training facilities, and other capabilities in order to facilitate research, education, training, and advisory services, in any field related to ocean and coastal resources;

"(B) will encourage and follow a regional approach to solving problems or meeting needs relating to ocean and coastal resources, in cooperation with appropriate sea grant colleges, sea grant programs, and other persons in the region;

"(C) will act in accordance with such guidelines as are prescribed under subsection (b)(2); and

"(D) meets such other qualifications as the Secretary deems necessary or appropriate.

"(b) REGULATIONS.—The Secretary shall by regulation prescribe—

"(1) the qualifications required to be met under paragraphs (2)(C) and (3)(D) of subsection (a); and

"(2) guidelines relating to the activities and responsibilities of sea grant colleges and sea grant regional consortia.

"(c) SUSPENSION OR TERMINATION OF DESIGNATION.—The Secretary may, for cause and after an opportunity for hearing, suspend or terminate any designation under subsection (a).

Hearing.

"SEC. 208. SEA GRANT FELLOWSHIPS.

"(a) IN GENERAL.—The Secretary shall support a sea grant fellowship program to provide educational and training assistance to qualified individuals at the undergraduate and graduate levels of education in fields related to ocean and coastal resources. Such fellowships shall be awarded pursuant to guidelines established by the Secretary. Sea grant fellowships may only be awarded by sea grant colleges, sea grant regional consortia, institutions of higher education, and professional associations and institutes.

33 USC 1127.

Guidelines.

"(b) LIMITATION ON TOTAL FELLOWSHIP GRANTS.—The total amount which may be provided for grants under the sea grant fellowship program during any fiscal year shall not exceed an amount equal to 5 percent of the total funds appropriated for such year pursuant to section 212.

"SEC. 209. SEA GRANT REVIEW PANEL.

"(a) ESTABLISHMENT.—There shall be established an independent committee to be known as the sea grant review panel. The panel shall, on the 60th day after the date of the enactment of the Sea Grant Program Improvement Act of 1976, supersede the sea grant advisory panel in existence before such date of enactment.

33 USC 1128.

Ante, p. 1961.

"(b) DUTIES.—The panel shall take such steps as may be necessary to review, and shall advise the Secretary, the Administrator, and the Director with respect to—

"(1) applications or proposals for, and performance under, grants and contracts awarded under sections 205 and 206;

"(2) the sea grant fellowship program;

"(3) the designation and operation of sea grant colleges and sea grant regional consortia, and the operation of sea grant programs;

"(4) the formulation and application of the planning guidelines and priorities under section 204 (a) and (c)(1); and

"(5) such other matters as the Secretary refers to the panel for review and advice.

The Secretary shall make available to the panel such information, personnel, and administrative services and assistance as it may reasonably require to carry out its duties.

"(c) MEMBERSHIP, TERMS, AND POWERS.—(1) The panel shall consist of 15 voting members who shall be appointed by the Secretary. The Director shall serve as a nonvoting member of the panel. Not less than five of the voting members of the panel shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in one or more of the disciplines and fields included in marine science. The other voting members shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in, or representative of, education, extension services, State government, industry, economics, planning, or any other activity which is appropriate to, and important for, any effort to enhance the understanding, assessment, development, utilization, or conservation of ocean and coastal resources. No individual is eligible to be a voting member of the panel if the individual is (A) the director of a sea grant college, sea grant regional consortium, or sea grant program; (B) an applicant for, or beneficiary (as determined by the Secretary) of, any grant or contract under section 205 or 206; or (C) a full-time officer or employee of the United States.

"(2) The term of office of a voting member of the panel shall be 3 years, except that of the original appointees, five shall be appointed for a term of 1 year, five shall be appointed for a term of 2 years, and five shall be appointed for a term of 3 years.

"(3) Any individual appointed to fill a vacancy occurring before the expiration of the term for which his or her predecessor was appointed shall be appointed only for the remainder of such term. No individual may be appointed as a voting member after serving one full term as such a member. A voting member may serve after the date of the expiration of the term of office for which appointed until his or her successor has taken office, or until 90 days after such date, whichever is earlier.

"(4) The panel shall select one voting member to serve as the Chairman and another voting member to serve as the Vice Chairman. The Vice Chairman shall act as Chairman in the absence or incapacity of the Chairman.

"(5) Voting members of the panel shall—

"(A) receive compensation at the daily rate for GS-18 of the General Schedule under section 5332 of title 5, United States Code, when actually engaged in the performance of duties for such panel; and

"(B) be reimbursed for actual and reasonable expenses incurred in the performance of such duties.

"(6) The panel shall meet on a biannual basis and, at any other time, at the call of the Chairman or upon the request of a majority of the voting members or of the Director.

"(7) The panel may exercise such powers as are reasonably necessary in order to carry out its duties under subsection (b).

Chairman,
Vice Chairman.

Compensation.
5 USC 5332
note.

"SEC. 210. INTERAGENCY COOPERATION.

"Each department, agency, or other instrumentality of the Federal Government which is engaged in or concerned with, or which has authority over, matters relating to ocean and coastal resources— 33 USC 1129.

"(1) may, upon a written request from the Secretary, make available, on a reimbursable basis or otherwise any personnel (with their consent and without prejudice to their position and rating), service, or facility which the Secretary deems necessary to carry out any provision of this title;

"(2) shall, upon a written request from the Secretary, furnish any available data or other information which the Secretary deems necessary to carry out any provision of this title; and

"(3) shall cooperate with the Administration and duly authorized officials thereof.

"SEC. 211. ANNUAL REPORT AND EVALUATION.

"(a) ANNUAL REPORT.—The Secretary shall submit to the Congress and the President, not later than February 15 of each year, a report on the activities of, and the outlook for, the national sea grant program. Submittal to Congress and President. 33 USC 1130.

"(b) EVALUATION.—The Director of the Office of Management and Budget and the Director of the Office of Science and Technology Policy, in the Executive Office of the President, shall have the opportunity to review each report prepared pursuant to subsection (a). Such Directors may submit, for inclusion in such report, comments and recommendations and an independent evaluation of the national sea grant program. Such material shall be transmitted to the Secretary not later than February 1 of each year, and the Secretary shall cause it to be published as a separate section in the annual report submitted pursuant to subsection (a).

"SEC. 212. AUTHORIZATION FOR APPROPRIATIONS.

"There is authorized to be appropriated for purposes of carrying out the provisions of this title (other than section 206) not to exceed \$50,000,000 for the fiscal year ending September 30, 1977. Such sums as may be appropriated under this section shall remain available until expended." 33 USC 1131.

SEC. 3. INTERNATIONAL COOPERATION ASSISTANCE.

(a) IN GENERAL.—The Secretary of Commerce (hereafter in this section referred to as the "Secretary") may enter into contracts and make grants under this section to— Contracts. 33 USC 1124a.

(1) enhance the research and development capability of developing foreign nations with respect to ocean and coastal resources, as such term is defined in section 203 of the National Sea Grant Program Act; and

(2) promote the international exchange of information and data with respect to the assessment, development, utilization, and conservation of such resources.

(b) ELIGIBILITY AND PROCEDURE.—Any sea grant college and sea grant regional consortium (as defined in section 203 of the National Sea Grant Program Act) and any institution of higher education, laboratory, or institute (if such institution, laboratory, or institute is located within any State (as defined in such section 203)) may apply for and receive financial assistance under this section. Each grant or contract under this section shall be made pursuant to such requirements as the Secretary shall, after consultation with the Secretary of State, by regulation prescribe. Application shall be made in such form, and with such content and other submissions, as may be so required. Before approving any application for a grant or contract under this section, the Secretary shall consult with the Secretary of State. Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in section 205(d) (2) and (4) of the National Sea Grant Program Act and to such other Regulation. Consultation.

terms, conditions, and requirements as the Secretary deems necessary or appropriate.

(c) AUTHORIZATION FOR APPROPRIATIONS.—There is authorized to be appropriated for purposes of carrying out this section not to exceed \$3,000,000 for the fiscal year ending September 30, 1977. Such sums as may be appropriated under this section shall remain available until expended.

SEC. 4. CONFORMING AND MISCELLANEOUS PROVISIONS.

(a) Section 5314 of title 5, United States Code, is amended by adding at the end thereof the following new paragraph:

“(65) Administrator, National Oceanic and Atmospheric Administration.”

(b) Section 5315 of title 5, United States Code, is amended by adding at the end thereof the following new paragraphs:

“(109) Deputy Administrator, National Oceanic and Atmospheric Administration.

“(110) Associate Administrator, National Oceanic and Atmospheric Administration.”

5 USC app. II;
15 USC 1511
note.

(c) (1) Section 2(d) of Reorganization Plan Numbered 4 of 1970 (84 Stat. 2090) is amended by striking out “Level V” and “(5 U.S.C. 5316)” and inserting in lieu thereof “Level IV” and “(5 U.S.C. 5315)”, respectively.

5 USC app. II.

(2) The individual serving as the Associate Administrator of the National Oceanic and Atmospheric Administration (pursuant to section 2(d) of Reorganization Plan Numbered 4 of 1970) on the date of the enactment of this Act shall continue as the Associate Administrator, notwithstanding the provisions of paragraph (1).

Approved October 8, 1976.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 94-1048 (Comm. on Merchant Marine and Fisheries) and No. 94-1556 (Comm. of Conference).

SENATE REPORT No. 94-848 accompanying S. 3165 (Committees on Labor and Public Welfare and Commerce).

CONGRESSIONAL RECORD, Vol. 122 (1976):

May 3, considered and passed House.

June 14, considered and passed Senate, amended, in lieu of S. 3165.

Sept. 17, Senate agreed to conference report.

Sept. 23, House agreed to conference report.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 12, No. 42:

Oct. 10, Presidential statement.

1978 Amendment

Public Law 95-428
95th Congress

An Act

To improve the operations of the national sea grant program, to authorize appropriations to carry out such program for fiscal years 1979 and 1980, and for other purposes.

Oct. 7, 1978
[H.R. 10822]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the title heading of title II of the Marine Resources and Engineering Development Act of 1966 (33 U.S.C. 1101 et seq.) is amended to read as follows:

National sea
grant program,
appropriation
authorization.

"TITLE II—NATIONAL SEA GRANT COLLEGE PROGRAM".

SEC. 2. (a) Section 201 of the National Sea Grant Program Act (33 U.S.C. 1121) is amended by inserting "College" immediately before "Program".

33 USC 1121
note.

(b) Sections 202(a)(3), 203(3), 204, and 211 are each amended by striking out "national sea grant program" each place it appears therein and inserting in lieu thereof "national sea grant college program".

33 USC 1121-
1123, 1130.

(c) The section heading of such section 204 is amended to read as follows:

"SEC. 204. NATIONAL SEA GRANT COLLEGE PROGRAM."

SEC. 3. The National Sea Grant College Program Act (as redesignated by section 2 of this Act) (33 U.S.C. 1121-1131) is amended—

(1) by amending section 204(d)—

33 USC 1123.

(A) by striking out "and" at the end of paragraph (5),

(B) by redesignating paragraph (6) as paragraph (7), and

(C) by inserting immediately after paragraph (5) the following new paragraph:

"(6) accept funds from other Federal departments, agencies (including agencies within the Administration), and instrumentalities to pay for grants made, and contracts entered into, by the Secretary under section 205(a); and";

33 USC 1124.

(2) by striking out the period at the end of the last sentence of section 205(a) and inserting in lieu thereof the following: "; except that this limitation shall not apply in the case of grants or contracts paid for with funds accepted by the Secretary under section 204(d)(6).";

33 USC 1123.

(3) by amending the first sentence of section 206(c) to read as follows:

33 USC 1125.

- 33 USC 1130. "There are authorized to be appropriated for purposes of carrying this section not to exceed the following amounts:
 "(1) \$5,000,000 for each of fiscal years 1977, 1978, and 1979.
 "(2) \$7,000,000 for fiscal year 1980."
 (4) by amending section 211—
 (A) by striking out "ANNUAL" in the section heading and inserting in lieu thereof "BIENNIAL",
 (B) by amending subsection (a) to read as follows:
 "(a) BIENNIAL REPORT.—The Secretary shall submit to the Congress and the President, not later than February 15, 1980, and not later than February 15 of every even-numbered year thereafter, a report on the activities of, and the outlook for, the national sea grant program."; and
 (C) by amending the last sentence of subsection (b) to read as follows: "Such material shall be submitted to the Secretary not later than February 1 of the year in which the report concerned is to be submitted under subsection (a), and the Secretary shall cause it to be published as a separate section in such report."; and
 (5) by amending the first sentence in section 212 to read as follows:
 "There are authorized to be appropriated for purposes of carrying out the provisions of this title (other than section 206) not to exceed the following amounts:
 "(1) \$50,000,000 for each of fiscal years 1977 and 1978.
 "(2) \$55,000,000 for each of fiscal years 1979 and 1980."
 SEC. 4. Section 3 of the Sea Grant Program Improvement Act of 1976 (33 U.S.C. 1124a) is amended—
 (1) by striking out "National Sea Grant Program Act" each place it appears therein and inserting in lieu thereof "National Sea Grant College Program Act";
 (2) by amending subsection (a) (2) to read as follows:
 "(2) promote the exchange among the United States and foreign nations (including, but not limited to, developing foreign nations) of information and data with respect to the assessment, development, utilization, and conservation of such resources."; and
 (3) by amending the first sentence of subsection (c) to read as follows:
 "There are authorized to be appropriated for purposes of carrying out this section not to exceed the following amounts:
 "(1) \$3,000,000 for each of fiscal years 1977, 1978, and 1979.
 "(2) \$5,000,000 for fiscal year 1980."

Approved October 7, 1978.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 95-1011 (Comm. on Merchant Marine and Fisheries).
 SENATE REPORT No. 95-887 (Comm. on Commerce, Science, and Transportation) and (Comm. on Human Resources).
 CONGRESSIONAL RECORD, Vol. 124 (1978):
 Apr. 17, considered and passed House.
 June 7, considered and passed Senate, amended.
 June 29, House concurred in Senate amendment with amendments.
 Sept. 25, Senate concurred in House amendments.

1980 Amendment

Public Law 96-289
96th Congress

An Act

To authorize appropriations to carry out the national sea grant program for fiscal years 1981, 1982, and 1983, and for other purposes.

June 28, 1980
[H.R. 6614]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the National Sea Grant College Program Act (33 U.S.C. 1121 et seq.), as amended, is further amended—

National sea
grant program,
appropriation
authorization.
33 USC 1121
note
33 USC 1122.
33 USC 1123.

(1) in section 203(6) by inserting "Great Lakes and the" immediately before "territorial sea";

(2) in section 204(c) by redesignating paragraphs (5) and (6) as paragraphs (6) and (7), respectively, and by inserting immediately after paragraph (4) the following new paragraph:

"(5) encourage cooperation and coordination with other Federal programs concerned with ocean and coastal resource conservation and usage;"

(3) in section 205(d)(2) by inserting "may be applied to the short-term rental of buildings or facilities for meetings which are in direct support of any sea grant program or project and" immediately after "contract" the second time it appears therein;

33 USC 1124.

(4) in section 206(c) by inserting "out" immediately after "carrying", and by inserting the following new paragraph immediately after paragraph (2):

33 USC 1125.

"(3) Not to exceed \$5,000,000 for fiscal year 1981, not to exceed \$6,000,000 for fiscal year 1982, and not to exceed \$7,000,000 for fiscal year 1983.";

(5) in section 209(c)(3) by striking the first two sentences and inserting in lieu thereof the following: "Any individual appointed to a partial or full term may be reappointed for one additional full term."; and

33 USC 1128.

(6) in section 212 by inserting the following new paragraph immediately after paragraph (2):

33 USC 1131.

"(3) Not to exceed \$50,000,000 for fiscal year 1981, not to exceed \$58,000,000 for fiscal year 1982, and not to exceed \$65,000,000 for fiscal year 1983.".

Sec. 2. Section 3(c) of the Sea Grant Program Improvement Act of 1976 (33 U.S.C. 1124a(c)) is amended by inserting the following new paragraph immediately after paragraph (2):

"(3) Not to exceed \$5,000,000 for fiscal year 1981, not to exceed \$5,000,000 for fiscal year 1982, and not to exceed \$5,000,000 for

fiscal year 1983."

SEC. 3. The section heading of section 3 of the Sea Grant Program Improvement Act of 1976 (33 U.S.C. 1124a) is amended to read as follows:

Applications for "SEC. 3. SEA GRANT INTERNATIONAL PROGRAM."

compensation.
22 USC 1980
note.

SEC. 4. (a) Notwithstanding the provisions of section 10(c)(1) of the Fishermens Protective Act of 1967 (22 U.S.C. 1980) applications for compensation under such Act, filed within 90 days after the date of enactment of this subsection shall be deemed to be timely filed.

(b) Section 10(c)(1) of the Fishermens Protective Act of 1967 (22 U.S.C. 1980) is amended by striking "sixty" and substituting "90"

Approved June 28, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-841 (Comm. on Merchant Marine and Fisheries).
SENATE REPORT No. 96-723 (Comm. on Commerce, Science, and Transportation
and Comm. on Labor and Human Resources).

CONGRESSIONAL RECORD, Vol. 126 (1980):

Apr. 17, considered and passed House.

May 22, considered and passed Senate, amended.

June 5, House concurred in Senate amendment with amendments.

June 9, Senate concurred in House amendments with an amendment.

June 16, House concurred in Senate amendment.

TAMU-SG-83-604
Texas A&M University
Sea Grant College Program