

**NOMINATION OF DR. MARK E. SCHAEFER
TO BE ASSISTANT SECRETARY
FOR OCEANS AND ATMOSPHERE FOR
THE U.S. DEPARTMENT OF COMMERCE**

HEARING

BEFORE THE

**COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE**

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

—————
JULY 24, 2013
—————

Printed for the use of the Committee on Commerce, Science, and Transportation



U.S. GOVERNMENT PRINTING OFFICE

86-666 PDF

WASHINGTON : 2014

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2104 Mail: Stop IDCC, Washington, DC 20402-0001

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

JOHN D. ROCKEFELLER IV, West Virginia, *Chairman*

BARBARA BOXER, California	JOHN THUNE, South Dakota, <i>Ranking</i>
BILL NELSON, Florida	ROGER F. WICKER, Mississippi
MARIA CANTWELL, Washington	ROY BLUNT, Missouri
MARK PRYOR, Arkansas	MARCO RUBIO, Florida
CLAIRE MCCASKILL, Missouri	KELLY AYOTTE, New Hampshire
AMY KLOBUCHAR, Minnesota	DEAN HELLER, Nevada
MARK WARNER, Virginia	DAN COATS, Indiana
MARK BEGICH, Alaska	TIM SCOTT, South Carolina
RICHARD BLUMENTHAL, Connecticut	TED CRUZ, Texas
BRIAN SCHATZ, Hawaii	DEB FISCHER, Nebraska
MARTIN HEINRICH, New Mexico	RON JOHNSON, Wisconsin
EDWARD MARKEY, Massachusetts	JEFF CHIESA, New Jersey

ELLEN L. DONESKI, *Staff Director*

JAMES REID, *Deputy Staff Director*

JOHN WILLIAMS, *General Counsel*

DAVID SCHWIETERT, *Republican Staff Director*

NICK ROSSI, *Republican Deputy Staff Director*

REBECCA SEIDEL, *Republican General Counsel and Chief Investigator*

CONTENTS

	Page
Hearing held on July 24, 2013	1
Statement of Senator Nelson	1
Statement of Senator Schatz	1
Statement of Senator Wicker	18
Statement of Senator Ayotte	22
Statement of Senator Scott	23

WITNESSES

Dr. Mark Schaefer, Nominee for Assistant Secretary for Oceans and Atmosphere, U.S. Department of Commerce	2
Prepared statement	4
Biographical information	5

APPENDIX

Response to written questions submitted to Dr. Mark E. Schaefer by:	
Hon. Maria Cantwell	27
Hon. Richard Blumenthal	28
Hon. John Thune	30
Hon. Roger F. Wicker	31
Hon. Marco Rubio	31
Hon. Kelly Ayotte	32

**NOMINATION OF DR. MARK E. SCHAEFER
TO BE ASSISTANT SECRETARY
FOR OCEANS AND ATMOSPHERE FOR
THE U.S. DEPARTMENT OF COMMERCE**

WEDNESDAY, JULY 24, 2013

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 10:01 a.m. in room SR-253, Russell Senate Office Building, Hon. Bill Nelson, presiding.

**OPENING STATEMENT OF HON. BILL NELSON,
U.S. SENATOR FROM FLORIDA**

Senator NELSON. Good morning. We are going to consider the nomination of Dr. Mark E. Schaefer of California to be Assistant Secretary of Commerce for Oceans and Atmosphere at the U.S. Department of Commerce. We look forward to your testimony, Doctor, and I want to accommodate the Senator from the great state of Hawaii, who needs to excuse himself because he has got to fly to Hawaii.

Senator Schatz?

**STATEMENT OF HON. BRIAN SCHATZ,
U.S. SENATOR FROM HAWAII**

Senator SCHATZ. Thank you very much, Chairman Nelson. I would like to start by thanking you for your accommodation. Dr. Schaefer, thank you for taking the time to testify before this committee and for visiting with my office individually. I am impressed by your qualifications and your track record of resolving issues with open and candid dialogue. And so, let me begin by saying that I support your nomination. I am anxious to support your speedy confirmation.

The budgetary process and pressures from the sequester will make your problem-solving through dialogue approach all the more important. NOAA's conservation portfolio is no stranger to litigation and legal challenges. But when funding is short, we cannot afford the expenses and inefficiency of lawsuits to manage critical ocean and coastal resources.

Hawaii has a number of issues, and I will offer a few questions for the record. And we had an opportunity to have a brief chat before the formal hearing began. And I do look forward to working with the issues that I will mention to you on the record, as well

as anything that may come up in Hawaii and the Pacific. But I want to cover two things with you this morning.

First, the statutory time limit of December 7, 2013 for NOAA's listing decision on 66 species of Pacific corals is rapidly approaching. Academic experts at the University of Hawaii have questioned NOAA's scientific basis for such a listing, but to the best of my knowledge, NOAA has not yet worked with the university experts to address their concerns. Could you please describe your approach going forward and how you are going to use the University of Hawaii's expertise on this important matter?

Dr. SCHAEFER. Yes, thank you, Senator Schatz, and thank you for those kind comments. The upcoming potential listing of the 66 corals is going to be one of the most complex listings that NOAA or perhaps any agency has undertaken. And it is going to be critically important to ensure that we use the best available science to underpin any decisions about listing and designation of critical habitat. I recognize that there is outstanding expertise at the University of Hawaii and elsewhere.

I have devoted my career to finding ways to ensure that we are linking the best available science with decision making processes, and I am committed to ensuring that we take advantage of the expertise in the state of Hawaii and elsewhere to guide us in the listing process.

Senator SCHATZ. Thank you. Thank you, Mr. Chairman.

Senator NELSON. Thank you, Senator.

Dr. Schaefer is currently Deputy Executive Director for Environmental Conflict Resolution at the Morris Udall and Stewart Udall Foundation, a position he has held since 2008. Before that, he served as an independent consultant, providing advice on environmental science and technology policy, including the Woodrow Wilson International Center for Scholars. And prior to this, he was Chief Executive Officer of Global Environment and Technology, and that is a foundation. He also was the Chief Executive Officer of NatureServe back at the first part of the last decade.

So, Dr. Schaefer, we welcome you. Your statement, please. And when Senator Wicker arrives, then I will recognize him for his statement. Please proceed.

**STATEMENT OF DR. MARK E. SCHAEFER, NOMINEE FOR
ASSISTANT SECRETARY FOR OCEANS AND ATMOSPHERE,
U.S. DEPARTMENT OF COMMERCE**

Dr. SCHAEFER. Thank you, Chairman Nelson. I appreciate those kind remarks. And thank you for the opportunity to testify this morning. It is an honor to be considered for the position of Assistant Secretary for Oceans and Atmosphere within the Department of Commerce.

I would like to take a moment to introduce my wife of nearly 35 years, Jo Ann—there she is—and my son, Greg. And my daughter, Hana, who I mentioned to the Senator was named after a certain town in Maui, will be here shortly.

My appreciation for the ocean began as a child through frequent trips with my father and mother to a cove in Laguna Beach, California. And later through travels along the Pacific and Atlantic and Gulf Coasts, I became familiar with the ocean environment and its

resources. And this led me to pursue studies in the biological sciences in college, and ultimately I received a B.A. from the University of Washington and a Ph.D. from Stanford University.

I have held positions in the public and private sectors for more than 30 years, primarily at the intersection of science and policy. Much of my career has been spent identifying ways to foster scientific and technological innovation to further national goals, including economic growth and the effective management and conservation of natural resources. I have also promoted efforts to make scientific information more accessible to the public in order to encourage greater stakeholder engagement in decision-making processes. Most recently, as you mentioned, I led the U.S. Institute for Environmental Conflict Resolution. That is an organization within the Udall Foundation that fosters collaborative efforts to prevent and resolve environmental and natural resources disputes involving Federal agencies. I have devoted the last several years to identifying ways to promote communication across Federal agencies and with tribes, State and local government agencies, and the private sector to efficiently address these issues.

Early in my career, I worked on science policy issues as a congressional science fellow at the former Office of Technology Assessment and as a senior staff member at the Carnegie Commission on Science, Technology, and Government. And these positions offered me the opportunity to learn from some of our nation's leaders about their experiences in working to advance public policy and to effectively manage large public institutions.

Later as Assistant Director for Environment in the Office of Science and Technology Policy in the Executive Office of the President, I worked on a wide range of issues, including ways to advance technologies to further national energy and environmental goals, and ways to better apply science and technology to prepare for and respond to natural disasters, including floods and hurricanes. As Deputy Assistant Secretary of the Interior for Water and Science, I worked on salmon and other fishery issues in the northwest and the east, water quality challenges from the Gulf of Mexico to the Everglades and Chesapeake Bay, and research and monitoring activities throughout the country, including the Great Lakes. These positions offered opportunities to collaborate with tribal, State, and local governments in addressing a range of economic and natural resource issues.

I appreciate the time several of you and your staff have taken in recent weeks to discuss issues related to the oceans, marine fisheries, and the diversity of species that inhabit our nation's coasts, and the tremendous economic and social value of these resources. The fishing industry, both commercial and recreational, is an integral component of the engine that drives our economy, and I am committed to ensuring that sustainability of this critical resource and the livelihoods that depend on it.

The diverse experiences I have had over my career have shaped the way I view and address environmental, natural resources, and economic issues. I very much enjoy working on challenges involving diverse and often competing perspectives. I place a priority on taking the time to understand alternative viewpoints to ensuring that scientific information is applied appropriately, and to working in a

collaborative fashion to devise sound policy and to prevent and resolve disputes. If I am confirmed, I look forward to working with you and supporting your efforts to help ensure the viability of the Nation's coastal and marine resources.

Thank you again for the opportunity to testify and for your consideration of my nomination. And I would be happy to respond to any questions you may have.

[The prepared statement and biographical information of Dr. Schaefer follow:]

PREPARED STATEMENT OF DR. MARK E. SCHAEFER, NOMINEE FOR ASSISTANT SECRETARY FOR OCEANS AND ATMOSPHERE, U.S. DEPARTMENT OF COMMERCE

Thank you Mr. Chairman.

Chairman Rockefeller, Ranking Member Thune, Members of the Committee, it is an honor to be considered for the position of Assistant Secretary for Oceans and Atmosphere within the U.S. Department of Commerce. Thank you for the opportunity to testify this morning.

I would like to take a moment to introduce my wife of nearly 35 years, Jo Ann, without whom I would not be here today. Beside her are my daughter Hana and son Greg. Both of them have graduated from college and have embarked on their own careers.

My appreciation for the ocean began as a child through frequent trips with my father and mother to a cove in Laguna Beach, California. Later, through travels along the Pacific, Atlantic, and Gulf coasts and in Hawaii, I became more familiar with the ocean environment and its resources, and this led me to pursue studies in the biological sciences in college. Ultimately, I received a B.A. from the University of Washington and Ph.D. from Stanford University.

I have held positions in the public and private sectors for more than 30 years, primarily at the intersection of science and policy. I have spent much of my career identifying ways to foster scientific and technological innovation to further national goals, including economic growth and the effective management and conservation of natural resources. I have also promoted efforts to make scientific information more accessible to the public to encourage greater stakeholder engagement in decision making processes. I am particularly interested in the application of information technologies, such as decision support systems, to further the organization and communication of scientific information.

Most recently, I have led the U.S. Institute for Environmental Conflict Resolution, an organization that fosters collaborative efforts to prevent and resolve environmental and natural resources disputes involving Federal agencies. I have devoted the last several years to identifying ways to promote communication across Federal agencies and with tribes, state and local government agencies, and the private sector to efficiently address these issues. I have worked to promote public engagement in decision-making by making information and tools readily available to people and by encouraging agencies to place an emphasis on collaborative, stakeholder-driven approaches to problem solving.

Early in my career I was a senior staff member with the Carnegie Commission on Science, Technology, and Government which offered the opportunity to learn from some of our nation's leaders about their experiences in working to advance public policy in this area and to effectively manage large public institutions. This included a number of meetings with Members of Congress to discuss the role of science and technology in policy-making processes. Twenty-five years ago, as a congressional fellow at the former Office of Technology Assessment, I worked on science policy matters before Congress and had the opportunity to lead a study of ways to improve the control of toxic substances that affect the nervous system.

As Assistant Director for Environment in the Office of Science and Technology Policy (OSTP) in the Executive Office of the President I worked on a wide range of issues including ways to advance technologies to further national energy and environmental goals, and ways to better apply science and technology to prepare for and respond to natural disasters, including floods and hurricanes. In my early days at OSTP I was involved in coordinating the organization of scientific information across Federal and state agencies and the private sector to guide efforts to recover from the Mississippi River flood of 1993.

As Deputy Assistant Secretary of the Interior for Water and Science, I worked on salmon and other fishery issues in the Northwest and East, and water quality chal-

allenges from the Gulf of Mexico to the Everglades and Chesapeake Bay. I helped foster research and monitoring activities throughout the country, including the Great Lakes. Working at Interior offered opportunities to collaborate with tribal, state, and local governments in addressing a range of economic and natural resource issues.

In the private sector, I served as the first President and CEO of an organization called NatureServe. NatureServe supports the consistent gathering of information about the status of animals and plants across the United States and in several countries throughout the Western Hemisphere. NatureServe's data are used to help guide decisions about commercial development, natural resource management, and conservation.

I appreciate the time several of you and your staff have taken in recent weeks to discuss issues related to the oceans, marine fisheries, the diversity of species that inhabit our nation's coasts and resources, and the tremendous economic and social value of these resources. The fishing industry, both commercial and recreational, is an integral component of the engine that drives our economy, and I am committed to ensuring the sustainability of this critical resource and the livelihoods that depend on it.

I have been fortunate to live in several states that comprise the Pacific, Gulf, and Atlantic coasts: from California, Oregon, and Washington; to Texas and Alabama; and Massachusetts, Virginia, and Georgia. This offered me the opportunity to observe first-hand the value people place on the coastal-marine environment.

The diverse experiences I have had over my career have shaped the way I view and address environmental, natural resources, and economic issues. I enjoy working on challenges involving diverse and often competing perspectives. I place a priority on taking the time to understand alternative viewpoints, to ensuring that scientific information is applied appropriately, and to working in a collaborative fashion to devise sound policy and to prevent and resolve disputes. If I am confirmed, I look forward to working with you and supporting your efforts to help ensure the viability of the Nation's coastal and marine resources.

Thank you again for the opportunity to testify and for your consideration of my nomination. I would be happy to respond to any questions you may have.

A. BIOGRAPHICAL INFORMATION

1. Name (Include any former names or nicknames used): Mark Schaefer.
2. Position to which nominated: Assistant Secretary for Oceans and Atmosphere, National Oceanic and Atmospheric Administration.
3. Date of Nomination: May 23, 2013.
4. Address: (List current place of residence and office addresses):
 Residence: Information not released to the public.
 Office: 130 South Scott Avenue, Tucson, AZ 85701.
5. Date and Place of Birth: April 24, 1954; Big Spring, Texas.
6. Provide the name, position, and place of employment for your spouse (if married) and the names and ages of your children (including stepchildren and children by a previous marriage).
 Spouse: Jo Ann Schaefer, not employed.
 Children: Hana Schaefer, age 31; Gregory Schaefer, age 25.
7. List all college and graduate degrees. Provide year and school attended.
 Ph.D. Neurosciences, 1987, Stanford University
 B.A., Zoology and Botany, 1977, University of Washington
8. List all post-undergraduate employment, and highlight all management-level jobs held and any non-managerial jobs that relate to the position for which you are nominated. (*designates management-level job)
 *Deputy Executive Director for Environmental Conflict Resolution, Morris K. Udall and Stewart L. Udall Foundation, 2008 to present.
 Independent Consultant (including part-time position, Executive Vice President, ZedX, Inc.), 2007–2008.
 *CEO, Global Environment and Technology Foundation, 2006–2007.
 *President and CEO, NatureServe, 2000–2006.
 *Acting Assistant Secretary for Water & Science, U.S. Department of the Interior, 2000.

*Deputy Assistant Secretary for Water and Science, U.S. Department of the Interior, 1996–2000.

*Acting Director, U.S. Geological Survey, 1997–1998.

Assistant Director for Environment, Office of Science and Technology Policy, Executive Office of the President, 1993–1996.

Staff Member, Presidential Personnel Office, Executive Office of the President, 1993.

Staff Member, Presidential Transition Team, 1993.

Director, Washington Office and Senior Staff Associate, Carnegie Commission on Science, Technology, and Government, 1989–1993.

Tutor in Environmental Policy (and Instructor, Winter 1993), Stanford in Washington, Stanford University, 1988–1993.

Study Director and Analyst, Office of Technology Assessment, U.S. Congress (and Congressional Science Fellow, 1987–1988), 1987–1989.

Graduate Student, Stanford University, 1983–1987.

Teaching Assistant, Stanford University, 1984–1985.

Staff Member, Environmental Research Laboratory, U.S. Environmental Protection Agency, 1980–1983.

Staff Member, Office of Research and Development, U.S. Environmental Protection Agency, 1977–1980.

9. Attach a copy of your resume. A copy is attached.

10. List any advisory, consultative, honorary, or other part-time service or positions with Federal, State, or local governments, other than those listed above, within the last five years. None.

11. List all positions held as an officer, director, trustee, partner, proprietor, agent, representative, or consultant of any corporation, company, firm, partnership, or other business, enterprise, educational, or other institution within the last five years.

Member and unit holder, Anew Outdoors, LLC (ended 2010)

Board Member, Foundation for Our Future (NGO) (ended 2008)

Officer, Changing Planet (NGO) (ended 2008)

12. Please list each membership you have had during the past ten years or currently hold with any civic, social, charitable, educational, political, professional, fraternal, benevolent or religious organization, private club, or other membership organization. Include dates of membership and any positions you have held with any organization. Please note whether any such club or organization restricts membership on the basis of sex, race, color, religion, national origin, age, or handicap.

Member, American Association for the Advancement of Science, Since 1983 (Intermittent, ended 2009).

Member, Commission on Education and Communication, World Conservation Union, 2004–2008.

Member, Board on Earth Sciences and Resources, National Research Council, National Academy of Sciences, 2002–2007.

Member, Advisory Committee, National Environmental Conflict Resolution, U.S. Institute for Environmental Conflict Resolution, Morris K. Udall Foundation, 2002–2005.

Member, National Commission on Science for Sustainable Forestry, 2001–2003.

Member, Good Shepherd Lutheran Church; Reston, Virginia, 1993–2008.

Member, Stanford University Alumni Association, 2000–2006.

Life Member, Stanford University Alumni Association, 2006–2013.

None of the associations I have been a member of restrict membership on the basis of sex, race, color, religion, national origin, age, or handicap.

13. Have you ever been a candidate for and/or held a public office (elected, non-elected, or appointed)? If so, indicate whether any campaign has any outstanding debt, the amount, and whether you are personally liable for that debt.

Acting Assistant Secretary for Water and Science, U.S. Department of the Interior, 2000.

Deputy Assistant Secretary for Water and Science, U.S. Department of the Interior, 1996–2000.

Acting Director, U.S. Geological Survey, 1997–1998.

Assistant Director for Environment, Office of Science and Technology Policy, Executive Office of the President, 1993–1996.

Staff Member, Office of Presidential Personnel, Executive Office of the President, 1993.

Member, Presidential Transition Team, 1993.

All of the above were political appointments by President Clinton.

14. Itemize all political contributions to any individual, campaign organization, political party, political action committee, or similar entity of \$500 or more for the past ten years. Also list all offices you have held with, and services rendered to, a state or national political party or election committee during the same period.

Presidential Campaign 2008, Barack Obama, 2/12/08: \$250.00; 10/01/08: \$250.00

Presidential Campaign 2012, Barack Obama, 3/24/12: \$250.00

No political positions held or services rendered.

15. List all scholarships, fellowships, honorary degrees, honorary society memberships, military medals, and any other special recognition for outstanding service or achievements.

Congressional Science Fellow, 1987–1988

Group Bronze Medal, U.S. EPA, 1983

Special Achievement Award, U.S. EPA, 1979, 1980

16. Please list each book, article, column, or publication you have authored, individually or with others. Also list any speeches that you have given on topics relevant to the position for which you have been nominated. Do not attach copies of these publications unless otherwise instructed.

I have done my best to identify books, articles, columns, publications or relevant speeches, including a thorough review of my personal files and searches of publicly available electronic databases. Despite my searches, there may be other materials I have been unable to identify, find, or remember. I have located the following:

Schaefer, M. (2010). Foreword: The Keepers of This Land. *Conservation of Shared Environments*, L. Lopez-Hoffman, *et al.*, (editors), University of Arizona Press, 2010.

Schaefer, M., Baker, D.J., Gibbons, J.H., Groat, C.G., Kennedy, D., Kennel, C.F., and Rejeski, D. (2008). An Earth Systems Science Agency. *Science*, Vol. 321 (4 July 2008), pp. 44–45.

Bond, J.S., Schaefer, M., Rejeski, D., and Nichols, R.W. (2008). OSTP 2.0, Critical Upgrade: Enhanced Capacity for White House Science and Technology Policymaking: Recommendations for the Next President, Woodrow Wilson International Center for Scholars, June 2008.

Schaefer, M. (2008). Water Technologies and the Environment: Ramping Up by Scaling Down. *Technology in Society*, Vol. 30, pp. 415–422 (Elsevier, Ltd.).

Schaefer, M. (2005). In Search of a Lifeline (Editorial). *Science*, Vol. 308 (April 2005), p. 325.

Schaefer, M. (2002). Jeffersonian GIS. *Geospatial Solutions*, April 2002.

Schaefer, M. (2001). Emerging Tools for Developing, Integrating, and Distributing Conservation Information. *The Role of Environmental NGOs: Russian Challenges, American Lessons*, National Academy Press.

Schaefer, M. (1999). Decision Support Systems and the Changing Landscape, Cambridge Conference, Cambridge, England, July, 1999, (Ordnance Survey, United Kingdom).

Dresler, P. and Schaefer, M. (1997). Regional Forums: Linking Science and Management. *Geotimes*, April 1998, pp. 24–27.

Schaefer, M. (1996). The Economic Promise of Environmental Technologies. *Technology and Global Economic Competitiveness*, New York Academy of Sciences.

Schaefer, M. (1993). Children and Toxic Substances: Confronting a Major Public Health Challenge. *Environmental Health Perspectives Supplements* 101(4).

Schaefer, M. (1992). Role of the U.S. Congress in Setting Goals and Priorities for Nutrition and Aging. *Aging: Clinical and Experimental Research*.

- Schaefer, M. (1991). The Federal Environmental Research Puzzle: Making the Pieces Fit. *Environment*, 33(9), pp. 16–20, 38–42.
- Schaefer, M. (1990). Rapid-Response Scientific and Technical Analysis for Congress. Carnegie Commission on Science, Technology, and Government.
- U.S. Congress. (1990). *Neurotoxicity: Identifying and Controlling Poisons of the Nervous System*. (Schaefer, M., Project Director). Office of Technology Assessment, U.S. Government Printing Office, Washington, D.C.
- Schaefer, M. (1988). Congress and Environmental Policy: Reflections on the Past, Directions for the Future. *Congressional Science Policy* (G.S. Sponsler, ed.), Carnegie Commission on Science, Technology, and Government, New York, New York.
- Schaefer, M. (1981). EPA's Soil Research at Corvallis. *EPA Journal* 7, 12–13.
- Schaefer, M. (1980). Marine Pollution. *Environmental Outlook. 1980*. U.S. Environmental Protection Agency. EPA-600/9-80-006.
- Schaefer, M. (editor). U.S. Environmental Protection Agency. Research Summary:
- Controlling Nitrogen Oxides. (1980). EPA-600/8-80-004.
 - Controlling Hazardous Wastes. (1980). EPA-600/8-8-017.
 - Chesapeake Bay. (1980). EPA-600/8-80-019.
 - Industrial Wastewater. (1980). EPA-600/8-80-026.
 - Integrated Pest Management. (1980). EPA-600/8-80.
 - Controlling Sulfur Oxides. (1980). EPA-600/8-80-029.
 - Oil Spills. (1979). EPA-600/8-79-007.
 - Acid Rain. (1979). EPA-600/8-79-028.

Contributor

- Federal Interagency Committee for the Management of Noxious and Exotic Weeds, R. Westbrooks, ed., (1998). *Invasive Plants: Changing the Landscape of America*.
- National Science and Technology Council. (1998). *Integrated Science for Sustainable Ecosystems*.
- Executive Office of the President. (1996). *Education for Sustainability: An Agenda for Action*.
- Executive Office of the President. (1995). *Bridge to a Sustainable? Future: National Environmental Technology Strategy*.
- National Science and Technology Council (1995). *Research Strategy for Risk Assessment*, Subcommittee on Natural Resources and the Environment.
- National Science and Technology Council. (1995). *Partnerships Supporting Education About the Environment: Summary of Proceedings, September 28–October 1, 1994*.
- Executive Office of the President. (1994). *Technology for a Sustainable Future: A Framework for Action*.
- Carnegie Commission on Science, Technology, and Government. (1993). *New Frontiers in Regulatory Decision Making: The Role of Science and Technology*.
- Carnegie Commission on Science, Technology and Government. (1993). *Risk and the Environment: Improving Regulatory Decision Making*.
- Carnegie Commission on Science, Technology, and Government. (1992). *Environmental R&D: Strengthening the Federal Infrastructure*.
- Carnegie Commission on Science, Technology, and Government. (1992). *A Science and Technology Agenda for the Nation: Recommendations for the President and Congress*.
- Carnegie Commission on Science, Technology, and Government (1992). *Enabling the Future: Linking Science and Technology to Societal Goals*.
- Carnegie Commission on Science, Technology, and Government. (1991). *Science, Technology, and Congress: Analysis and Advice from the Congressional Support Agencies*.
- Carnegie Commission on Science, Technology, and Government. (1991). *Science, Technology, and Congress: Expert Advice and the Decision-Making Process*.
- U.S. Congress. (1990). *Neurotoxicity: Identifying and Controlling Poisons of the Nervous System*. Office of Technology Assessment, U.S. Government Printing Office, Washington, D.C.

- U.S. Environmental Protection Agency. (1980). *Acid Rain*. EPA-600/9-79-036.
- U.S. Environmental Protection Agency. (1980). *Research Highlights 1979*. EPA-600/9-80-005.
- U.S. Environmental Protection Agency. (1978). *Energy/Environment III*. Proceedings of the Third National Conference on the Interagency Research and Development Program. EPA-600/9-78-002.

Technical Scientific Publications

- Schaefer, M. (1987). Molecular Genetic Analysis of FMRFamide and Related Neuropeptide Genes. Ph.D. Thesis. Stanford University, Stanford, California.
- Kreiner, T., Schaefer, M. and Scheller, R.H. (1986). The Aplysia Neuroendocrine System. *Frontiers in Neuroendocrinology*, Vol. 9 (William F. Ganong, ed.).
- Schaefer, M. and Brownell, P.H. (1986). Modulation of a Respiratory Motor Program by Peptide-Secreting Neurons in Aplysia. *Journal of Neurobiology*, 17, 121-126.
- Eberwine, J., Schaefer, M., Tecott, L., Tatemoto, K., Valentino, K.L. and Barchas, J.D. (1986). Isolation and Characterization of cDNA and Gene Clones Coding for Rat Pancreastatin. *Society of Neuroscience*, Abstract 12.
- Schaefer, M., Shirk, P.D., Roth, D.R. and Brownell, P.H. (1985). Activity Related Changes in Protein Phosphorylation in an Identified Aplysia Neuron. *Cellular and Molecular Neurobiology*, 5, 321-331.
- Kaldany, R.-R., Campanelli, J.T., Schaefer, M., Shyamala, M. and Scheller, R.H. (1985). Low Molecular Weight Proteins of Aplysia Neurosecretory Cells. *Peptides*, 6, 445-449.
- Scheller, R.H. and Schaefer, M. (1985). Neuropeptide Gene Expression and Behavior in Aplysia. *Model Neural Networks and Behavior* (A.I. Selverston, Ed.), Plenum Publishing Co., New York.
- Schaefer, M., Picciotto, M.R., Kreiner, T., Kaladany, R.-R., Taussig, R. and Scheller, R.H. (1985). Aplysia Neurons Express a Gene Encoding Multiple FMRFamide Neuropeptides. *Cell*, 41, 457-467.
- Scheller, R.H., Kaldany, R.-R., Kreiner, T., Mahon, A.C., Nambu, J.R., Schaefer, M. and Taussig, R. (1984). Neuropeptides: Mediators of Behavior in Aplysia. *Science*, 225, 1300-1308.
- Brownell, P.H. and Schaefer, M. (1984). Neuronal Mechanisms of a Siphon Motor Program Induced by Peptidergic Bag Cell neurons in Aplysia. *Society of Neuroscience*, Abstract 10, 150.
- Kaldany, R.-R., Schaefer, M., Evans, C., Mak, G. and Scheller, R.H. (1984). Processing of a Neuropeptide Precursor in the R3-14 Cells of Aplysia. *Society of Neuroscience*, Abstract 10, 150.
- Scheller, R.H., Kaldany R.R., Kreiner, T., Schaefer, M. (1983). Cellular and Molecular Studies of the Neuropeptides Used by Aplysia Abdominal Ganglion Neurons R3-14. *Journal of Cellular Biochemistry*, Supp. 8B, 95.
- Schaefer, M., Brownell, P.H. and Shirk, P. (1983). Evidence for Neuro Specific Protein Phosphorylation Following Peptidergic Bag Cell Activity in Aplysia. *Society of Neuroscience*, Abstr. 9.
- Brownell, P.H. and Schaefer, M. (1982). Activation of a Long-Lasting Motor Program by Cell Neurons in Aplysia. *Society of Neuroscience*, Abstr. 8, 736.

Speeches

- Speaker
 "Institutionalizing Collaboration and Environmental Conflict Resolution in the Federal Government"
 Symposium on Federal Alternative Dispute Resolution Programs: Successes and Challenges
 U.S. Department of Justice
 Washington, D.C., March 2012
- Speaker
 "The Keepers of this Land"
 Conservation of Shared Environments
 James E. Rogers School of Law
 University of Arizona
 Tucson, AZ, February 2010

Moderator and Speaker
 “The Serious Business of Environmental Education”
 National Forum on Partnerships Supporting Education About the Environment
 San Francisco, CA, September 1994

Panelist and Speaker
 “Science and Politics”
 Business Government Relations Council
 26th Annual Meeting
 White Sulphur Springs, West Virginia, September 1992

Panelist and Speaker
 “Assessment as the Link Between Research and Policy”
 Conference on the National Institutes of the Environment
 Chevy Chase, Maryland, May 1992

Speaker
 “Analysis and Advice from the Congressional Support Agencies”
 Seminar on Science, Technology, and Public Policy
 Western Executive Seminar Center
 Office of Personnel Management
 Denver, Colorado, 1992

Speaker
 “Bridging the Environmental Research/Policy Interface: Three Organizational
 and Procedural Proposals”
 Meeting of American Association for the Advancement of Science
 Chicago, Illinois, February 1992

Speaker
 “Analysis and Advice from the Congressional Support Agencies”
 Seminar on Science, Technology, and Public Policy
 Western Executive Seminar Center
 Office of Personnel Management
 Denver, Colorado, December 1991

Chair and Speaker
 “Roundtable Discussion on Long-Range Perspectives for Environmental Policy”
 Thirteenth Annual Research Conference
 Association for Public Policy Analysis & Management
 Washington, D.C., October 1991

Speaker
 “S&T for the 90s”
 Institute for Defense Analyses
 Alexandria, Virginia, February 1991

Speaker
 “Neurotoxicity Update—A Regulatory Perspective”
 Society of Toxicology, National Capitol Area Chapter
 Washington, D.C., January 1991

Speaker
 “Testing and Regulating Neurotoxic Substances”
 Pharmacology and Toxicology Committee
 The Cosmetic, Toiletry and Fragrance Association
 Washington, D.C., January 1991

Speaker
 “Science, Technology, and Congress”
 Brookings Institution Conference on Issues in Science & Technology
 Williamsburg, Virginia, September 1990

Speaker
 “Science, Technology, and Congress”
 MIT Management of Technology Program
 The Brookings Institution
 Washington, D.C., January 1990

Moderator and Sponsor
 Workshop on Federal Interagency Coordination of Neurotoxicity Research and
 Regulatory Programs
 Congressional Office of Technology Assessment
 Washington, D.C., May 1989

Chair
 Policy Roundtable: Pros and Cons of a Proposed Department of Science & Technology
 Tenth Annual Research Conference
 Association for Public Policy & Analysis
 Seattle, Washington, October 1988

17. Please identify each instance in which you have testified orally or in writing before Congress in a governmental or non-governmental capacity and specify the date and subject matter of each testimony.

Congressional Testimony

El Niño Forecasts and Plans for Operating Dams and other Facilities in the Western United States
 Subcommittee on Water and Power
 Committee on Resources
 U.S. House of Representatives
 October 30, 1997

Pfiesteria and its Impacts on Our Fishery Resources
 Subcommittee on Fisheries Conservation
 Committee on Resources
 U.S. House of Representatives
 October 9, 1997

Science and Resource Management in the National Park System
 Subcommittee on National Parks and Public Lands
 Committee on Resources
 U.S. House of Representatives
 February 27, 1997

Strengths and Weaknesses of the Federal Environmental Research and Development System
 Subcommittee on Technology, Environment, and Aviation
 Committee on Science, Space, and Technology
 U.S. House of Representatives
 November 1994

Coordinating Federal Environmental R&D Programs—The Role of the National Science and Technology Council
 Subcommittee on Toxic Substances, and Research and Development
 Committee on Environment and Public Works
 U.S. Senate
 July 1994

Strengthening Risk Assessment within the U.S. Environmental Protection Agency
 Subcommittee on Technology, Environment, and Aviation
 Committee on Science, Space, and Technology
 U.S. House of Representatives
 March 1994

Federal Environmental R&D Programs
 Subcommittee on Technology, Environment, and Aviation
 Committee on Science, Space, and Technology
 U.S. House of Representatives
 March 2, 1993

Identifying and Controlling Neurotoxic Substances
 Subcommittee on Toxic Substances, Environmental Oversight, Research and Development
 Committee on Environment and Public Works
 U.S. Senate
 October 1990

Vulnerability of Children to Neurotoxic Substances
 Select Committee on Children, Youth, and Families
 U.S. House of Representatives
 September 1990

18. Given the current mission, major programs, and major operational objectives of the department/agency to which you have been nominated, what in your background or employment experience do you believe affirmatively qualifies you for ap-

pointment to the position for which you have been nominated, and why do you wish to serve in that position?

I believe my past experience leading and overseeing complex organizations focused on natural resources management, conservation, and science will allow me to contribute to and effectively serve the National Oceanic and Atmospheric Administration. The diverse experiences I have been fortunate to have, along with my interests in science, technology, and government, will also be helpful in this regard.

Much of my career has been dedicated to furthering the linkages between water, science, and environmental policy which will be helpful in guiding work related to fisheries resources and protection of endangered and threatened species. During the Clinton Administration, I worked on many water resource issues including salmon recovery and conservation, effective dam operation, and a range of water policy issues nationwide. I worked to guide scientific activities supporting the recovery of the Mississippi River basin following the floods of 1993. I was actively involved in efforts to monitor and limit the adverse impacts of invasive species. I was involved in the Federal response to the Pfiesteria problem in the Carolinas, Gulf of Mexico hypoxia issues, and in the scientific aspects of recovery of the Everglades. More recently, I worked on issues related to the expansion of military activities on Guam and efforts to avoid impacts on coral reefs associated with expanded naval operations.

During the Clinton Administration, I was actively involved in the application of national assets to aid in responding to natural disasters, including hurricanes and floods.

If confirmed, I will work to ensure the effective management and conservation of our coastal and marine resources that are critically important from both the economic and ecological perspectives.

19. What do you believe are your responsibilities, if confirmed, to ensure that the department/agency has proper management and accounting controls, and what experience do you have in managing a large organization?

Effective management of agency programs is critical to maintaining public trust in government. Federal managers have a responsibility to ensure that public funds are used efficiently and are properly accounted for. This is particularly important during this period of economic recovery and public concern about Federal spending. I have managed and overseen large Federal agencies including the U.S. Geological Survey and the Bureau of Reclamation. During the Clinton Administration, I was charged by the Secretary of the Interior with overseeing the closure of the Bureau of Mines and the relocation of as many employees as possible to other Federal agencies. We accomplished this in an orderly fashion with respect for the careers of several thousand Federal employees.

20. What do you believe to be the top three challenges facing the department/agency, and why?

I believe the three major challenges facing the conservation and management side of the National Oceanic and Atmospheric Administration are working to minimize the impacts of wide range of threats to the viability of coastal and marine environments, ensuring the sustainability of coastal and marine fisheries, and protecting threatened and endangered species, while balancing the economic uses of the resources that are facing these threats. All of these activities are dependent upon the strong foundation of research, development, and monitoring activities.

Healthy coastal and marine environments are critical to the economies of coastal states and to the Nation more generally. These environments are facing multiple stressors that must be systematically addressed in a practical, cost-effective fashion.

Sustaining fisheries resources, a central element of our economy, is one of the great challenges of our time. Federal, state, and local governments must work in concert with the fishing industry, nongovernmental organizations, and other stakeholders to ensure the long-term sustainability of these resources.

B. POTENTIAL CONFLICTS OF INTEREST

1. Describe all financial arrangements, deferred compensation agreements, and other continuing dealings with business associates, clients, or customers. Please include information related to retirement accounts.

I have no financial arrangements or compensation agreements. I have TIAA/CREF (\$159,289) and Fidelity retirement accounts (\$156,437), along with a Federal Thrift Savings Plan (\$358,583). All of my investments are in mutual funds in retirement accounts.

2. Do you have any commitments or agreements, formal or informal, to maintain employment, affiliation, or practice with any business, association or other organization during your appointment? If so, please explain. None.

3. Indicate any investments, obligations, liabilities, or other relationships which could involve potential conflicts of interest in the position to which you have been nominated.

In connection with the nomination process, I have consulted with the Office of Government Ethics and the Department of Commerce's designated agency ethics official to identify potential conflicts of interest. Any potential conflicts of interest will be resolved in accordance with the terms of an ethics agreement that I have entered into with the Department of Commerce's designated agency ethics official and that has been provided to this Committee. I am not aware of any other potential conflicts of interest.

4. Describe any business relationship, dealing, or financial transaction which you have had during the last ten years, whether for yourself, on behalf of a client, or acting as an agent, that could in any way constitute or result in a possible conflict of interest in the position to which you have been nominated.

In connection with the nomination process, I have consulted with the Office of Government Ethics and the Department of Commerce's designated agency ethics official to identify potential conflicts of interest.

Any potential conflicts of interest will be resolved in accordance with the terms of an ethics agreement that I have entered into with the Department of Commerce's designated agency ethics official and that has been provided to this Committee. I am not aware of any other potential conflicts of interest.

5. Describe any activity during the past ten years in which you have been engaged for the purpose of directly or indirectly influencing the passage, defeat, or modification of any legislation or affecting the administration and execution of law or public policy.

I have had some indirect involvement in supporting various legislative proposals in Congress related to compensation for the former American hostages in Iran (between 2008 and 2013). My father was one of the 52 hostages held captive from November 1979 to January 1981.

While leading the U.S. Institute for Environmental Conflict Resolution (1988 to present), I have performed typical duties of a Federal manager in meeting with congressional staff in connection with the annual appropriations process.

6. Explain how you will resolve any potential conflict of interest, including any that may be disclosed by your responses to the above items.

In connection with the nomination process, I have consulted with the Office of Government Ethics and the Department of Commerce's designated agency ethics official to identify potential conflicts of interest. Any potential conflicts of interest will be resolved in accordance with the terms of an ethics agreement that I have entered into with the Department of Commerce's designated agency ethics official and that has been provided to this Committee. I am not aware of any other potential conflicts of interest.

C. LEGAL MATTERS

1. Have you ever been disciplined or cited for a breach of ethics by, or been the subject of a complaint to any court, administrative agency, professional association, disciplinary committee, or other professional group? If so, please explain. No.

2. Have you ever been investigated, arrested, charged, or held by any Federal, State, or other law enforcement authority of any Federal, State, county, or municipal entity, other than for a minor traffic offense? If so, please explain. No.

3. Have you or any business of which you are or were an officer ever been involved as a party in an administrative agency proceeding or civil litigation? If so, please explain.

As the son of a diplomat held hostage at the U.S. embassy in Tehran from 1979 to 1981, I have been a party to several class action lawsuits seeking restitution from the Islamic Republic of Iran for the hostage taking. The lawsuits have not been successful.

In 2008, my wife and I filed a lawsuit against a builder for improper construction of our home and for impacts on my wife's health. We received compensation for damages as a result of a settlement.

I am a complainant in a pending Office of the Special Counsel (OSC) matter: 2012 to present, I and other senior managers at the Udall Foundation expressed concerns about financial and personnel matters to the Chair and the Vice Chair of the Udall Foundation Board of Trustees, the Udall Foundation Executive Director, and Interim Executive Director. Certain members of the leadership took retaliatory action against me and other senior managers who had made disclosures. As a result, I and other senior managers filed complaints with the OSC related to the retaliation

against us for expressing these concerns. While this matter is still pending, I am not aware of any counter-complaints or factual allegations asserted against me.

4. Have you ever been convicted (including pleas of guilty or *nolo contendere*) of any criminal violation other than a minor traffic offense? If so, please explain. No.

5. Have you ever been accused, formally or informally, of sexual harassment or discrimination on the basis of sex, race, religion, or any other basis? If so, please explain. No.

6. Please advise the Committee of any additional information, favorable or unfavorable, which you feel should be disclosed in connection with your nomination.

None to my knowledge.

D. RELATIONSHIP WITH COMMITTEE

1. Will you ensure that your department/agency complies with deadlines for information set by congressional committees? Yes.

2. Will you ensure that your department/agency does whatever it can to protect congressional witnesses and whistle blowers from reprisal for their testimony and disclosures? Yes.

3. Will you cooperate in providing the Committee with requested witnesses, including technical experts and career employees, with firsthand knowledge of matters of interest to the Committee? Yes.

4. Are you willing to appear and testify before any duly constituted committee of the Congress on such occasions as you may be reasonably requested to do so? Yes.

RESUMÉ OF MARK SCHAEFER

Deputy Executive Director for Environmental Conflict Resolution Morris K. Udall and Stewart L. Udall Foundation Tucson, Arizona	2008–present
Independent Consultant (including Woodrow Wilson International Center for Scholars, Worrell Water Technologies; part-time position, Executive Vice President, ZedX, Inc.)	2007–2008
CEO Global Environment and Technology Foundation Arlington, Virginia	2006–2007
President and CEO NatureServe Arlington, Virginia	2000–2006
Deputy Assistant Secretary of the Interior for Water & Science (& Acting Assistant Secretary, 2000) Washington, D.C.	1996–2000
Acting Director, U.S. Geological Survey (October 1997 to February 1998) Washington, D.C.	1997–1998
Assistant Director for Environment Office of Science and Technology Policy Executive Office of the President Washington, D.C.	1993–1996
Director, Washington Office & Senior Staff Associate Carnegie Commission on Science, Technology, & Government Washington, D.C.	1989–1993
Tutor in Environmental Policy (& Instructor, Winter 1993) Stanford in Washington, Stanford University Washington, D.C.	1988–1993
Study Director & Analyst Office of Technology Assessment U.S. Congress, Washington, D.C.	1987–1989
Congressional Science Fellow Office of Technology Assessment U.S. Congress, Washington, D.C.	1987–1988
Graduate Student Stanford University, Stanford, California	1983–1987

Teaching Assistant Stanford University, Stanford, California	1984–1985
Staff Member, Environmental Research Laboratory U.S. Environmental Protection Agency Corvallis, Oregon	1980–1983
Staff Member, Office of Research and Development U.S. Environmental Protection Agency Washington, D.C.	1977–1980

Boards and Commissions

Member Commission on Education and Communication World Conservation Union (IUCN)	2004–2008
Member Board on Earth Sciences and Resources National Research Council National Academy of Sciences	2002–2007
Member National Environmental Conflict Resolution Advisory Committee	2002–2005
Member National Commission on Science for Sustainable Forestry	2001–2003
Trustee, Morris K. Udall Foundation Tucson, Arizona	1996–1999

Education

Ph.D., Neurosciences Stanford University, Stanford, California	1987
B.A., Zoology & Botany University of Washington, Seattle, Washington	1977

Fellowships and Professional Awards

Congressional Science Fellow	1987–1988
Group Bronze Medal, U.S. EPA	1983
Special Achievement Award, U.S. EPA	1979, 1980

Selected Publications

Schaefer, M., Baker, D.J., Gibbons, J.H., Groat, C.G., Kennedy, D., Kennel, C.F., and Rejeski, D. (2008). An Earth Systems Science Agency, *Science*, Vol. 321 (4 July 2008), pp. 44–45.

Bond, J.S., Schaefer, M., Rejeski, D., and Nichols, R.W. (2008). OSTP 2.0, Critical Upgrade: Enhanced Capacity for White House Science and Technology Policy-making: Recommendations for the Next President, Woodrow Wilson International Center for Scholars, June 2008.

Schaefer, M. (2008). Water Technologies and the Environment: Ramping Up by Scaling Down. *Technology in Society* Vol. 30, pp. 415–422 (Elsevier, Ltd.).

Schaefer, M. (2005). In Search of a Lifeline (Editorial), *Science*, Vol. 308 (April 2005), p. 325

Schaefer, M. (2002). Jeffersonian GIS, *Geospatial Solutions*, April 2002

Schaefer, M. (2001). Emerging Tools for Developing, Integrating, and Distributing Conservation Information, in: *The Role of Environmental NGOs: Russian Challenges, American Lessons*, National Academy Press.

Schaefer, M. (1996). The Economic Promise of Environmental Technologies, in: *Technology and Global Economic Competitiveness*, New York Academy of Sciences.

Schaefer, M. (1993). Children and Toxic Substances: Confronting a Major Public Health Challenge. *Environmental Health Perspectives Supplements* 101(4).

Schaefer, M. (1991). The Federal Environmental Research Puzzle: Making the Pieces Fit. *Environment* 33(9), pp. 16–20, 38–42.

Contributor

Federal Interagency Committee for the Management of Noxious and Exotic Weeds, R. Westbrooks, ed., (1998). *Invasive Plants: Changing the Landscape of America*.

- National Science and Technology Council. (1998). *Integrated Science for Sustainable Ecosystems*.
- Executive Office of the President. (1996). *Education for Sustainability: An Agenda for Action*.
- Executive Office of the President. (1995). *Bridge to a Sustainable Future: National Environmental Technology Strategy*.
- National Science and Technology Council. (1995). *Research Strategy for Risk Assessment*, Subcommittee on Natural Resources and the Environment.
- National Science and Technology Council. (1995). *Partnerships Supporting Education About the Environment: Summary of Proceedings, September 28–October 1, 1994*.
- Executive Office of the President. (1994). *Technology for a Sustainable Future: A Framework for Action*.
- Carnegie Commission on Science, Technology, and Government. (1993). *New Frontiers in Regulatory Decision Making: The Role of Science and Technology*.
- Carnegie Commission on Science, Technology, and Government. (1993). *Environmental R&D: Strengthening the Federal Infrastructure*.
- Carnegie Commission on Science, Technology, and Government. (1993). *A Science and Technology Agenda for the Nation: Recommendations for the President and Congress*.
- Carnegie Commission on Science, Technology, and Government. (1992). *Enabling the Future: Linking Science and Technology to Societal Goals*.
- Carnegie Commission on Science, Technology, and Government. (1991). *Science, Technology, and Congress: Analysis and Advice from the Congressional Support Agencies*.
- Carnegie Commission on Science, Technology, and Government. (1991). *Science, Technology, and Congress: Expert Advice and the Decision-Making Process*.
- U.S. Congress. (1990). *Neurotoxicity: Identifying and Controlling Poisons of the Nervous System*. Office of Technology Assessment, U.S. Government Printing Office, Washington, D.C.

Congressional Testimony

- El Niño Forecasts and Plans for Operating Dams and other Facilities in the Western United States*
 Subcommittee on Water and Power
 Committee on Resources
 U.S. House of Representatives
 October 30, 1997
- Pfiesteria and its Impacts on Our Fishery Resources*
 Subcommittee on Fisheries Conservation
 Committee on Resources
 U.S. House of Representatives
 October 9, 1997
- Science and Resource Management in the National Park System
 Subcommittee on National Parks and Public Lands
 Committee on Resources
 U.S. House of Representatives
 February 27, 1997
- Strengths and Weaknesses of the Federal Environmental Research and Development System*
 Subcommittee on Technology, Environment, and Aviation
 Committee on Science, Space, and Technology
 U.S. House of Representatives
 November 1994

Coordinating Federal Environmental R&D Programs—The Role of the National Science and Technology Council
 Subcommittee on Toxic Substances, and Research and Development
 Committee on Environment and Public Works
 U.S. Senate
 July 1994

Strengthening Risk Assessment within the U.S. Environmental Protection Agency
 Subcommittee on Technology, Environment, and Aviation
 Committee on Science, Space, and Technology
 U.S. House of Representatives
 March 1994

Federal Environmental R&D Programs
 Subcommittee on Technology, Environment, and Aviation
 Committee on Science, Space, and Technology
 U.S. House of Representatives
 March 1993

Identifying and Controlling Neurotoxic Substances
 Subcommittee on Toxic Substances, Environmental Oversight, Research and Development
 Committee on Environment and Public Works
 U.S. Senate
 October 1990

Vulnerability of Children to Neurotoxic Substances
 Select Committee on Children, Youth, and Families
 U.S. House of Representatives
 September 1990

Senator NELSON. Senator Schatz, do you have any more questions before you have to go?

Senator SCHATZ. Thank you, Mr. Chairman. I do have one additional question. I apologize for going out of order.

Senator NELSON. No, you are certainly welcome.

Senator SCHATZ. My question is about the bigeye tuna issue, if you will just give me a moment to pull up the question. The Western Pacific Fisheries Management Commission has, under the South Pacific Tuna Treaty, established an annual quota on bigeye tuna for Hawaii's longline fleet. And that quota is too low to support their full-year participation in the fishery.

If confirmed, do I have your commitment to work with us to constructively support the well-managed Western Pacific longline fishery?

Dr. SCHAEFER. Yes, Senator Schatz. I know this is a very important issue in Hawaii and to you personally. And I am happy to take the time to work carefully to ensure that that fishery is managed optimally.

Senator SCHATZ. Thank you very much. We do have a well-managed fishery, and it is a big industry for the state of Hawaii. And to the extent that it is both profitable and sustainable, it ought to be a model for the rest of the world. And we are going to have to make some adjustments on the fly to make sure that they remain economically viable as they have demonstrated that they are being managed sustainably.

Dr. SCHAEFER. I would welcome the opportunity to work with you on that.

Senator SCHATZ. Thank you very much, Dr. Schaefer.

Thank you, Mr. Chairman.

Senator NELSON. Senator Wicker, your comments and then your questions.

**STATEMENT OF HON. ROGER F. WICKER,
U.S. SENATOR FROM MISSISSIPPI**

Senator WICKER. Thank you very much, Mr. Chairman. I just left the Joint Economic Committee talking about infrastructure, and I got over here as soon as I could. So I am appreciative that Senator Schatz was here to ask questions, and I am glad that we did not adjourn the hearing before I could get here.

I want to thank you, Senator Nelson, for chairing this hearing on the nomination of Dr. Schaefer to be Assistant Secretary for—of Commerce for Oceans and Atmosphere. It is important for the Committee to review the nominations for NOAA leadership promptly in order for this Agency to be managed appropriately.

It may come to—as a surprise to some of our viewers today that NOAA is the largest agency within the Department of Commerce, and has a mission of science, service, and stewardship. The Agency is responsible for conducting research and gathering data to help us understand our oceans and atmosphere, as well as manage our resources. The responsibilities of NOAA include daily weather forecasts, fisheries management, coastal restoration, and support for marine commerce. NOAA is organized into six line offices and requires strong leadership to ensure that these line offices of working together and serving the needs of our country.

NOAA has a vital presence throughout our Nation, including in my home state of Mississippi. NOAA facilities in Mississippi include the National Data Buoy Center, the Northern Gulf Institute, the National Institute for Undersea Science and Technology, and the National Coastal Data Development Center. The work performed at these centers and institutes is important for understanding our oceans and coasts and protecting our resources for our citizens.

Today, NOAA faces many challenges, including a tough fiscal environment, needed improvements in fisheries management, and the restoration of the Gulf of Mexico following the *Deepwater Horizon* disaster. If not handled appropriately, sequestration has a potential to endanger the NOAA mission. Large cuts have already been made at the National Data Buoy Center, which is crucial for environmental monitoring.

Recreational fishing issues have also been challenging. This year, two lawsuits were filed against the National Marine Fisheries Services regarding the Federal management of red snapper, and I will ask the witness about that in just a moment.

NOAA will need to work with local partners to resolve these issues in coming years. It is also tasked with important responsibilities for Gulf restoration under the RESTORE Act. We are counting on NOAA leadership to manage RESTORE Act programs and funds properly. I look forward to hearing Dr. Schaefer's perspectives on how NOAA can face these challenges.

And again, thank you, Senator Nelson, for holding the hearing.

Senator NELSON. If you want to go on and ask some questions.

Senator WICKER. Well, let me ask then, if I might, about the red snapper issue. Tell us what—enlighten the Committee, if you will, about the red snapper lawsuits, and how do you feel about fisheries management approaches that require coordination between the states and Federal Government?

Dr. SCHAEFER. Thank you, Senator Wicker. Yes, the red snapper issue is, in many ways, similar to other issues on other coasts in that often the fundamental question is just how many fish are there and what is the quality of the most recent stock assessment. And one of the continuing challenges is making sure that we have access to the best—that NOAA has access to the best available science in order to make accurate stock assessments.

I know there is a disagreement in the Gulf about just how many fish there are there, and there has also been some substantial improvement in the red snapper stocks. But at the same time, the pace of fishing has picked up. So things are improving, but there is still that basic question about the viability of the fishery and the available fish.

And that is the nature of the disagreement as I understand it. I am not familiar with the details of the individual lawsuits, but I am committed to this fundamental issue of ensuring that we are bringing the best available science to bear in making fisheries decisions, and that we are working effectively with the states and the fishery management councils to ensure that we are using those data to make sound decisions.

Senator WICKER. Do you think the discrepancy in the estimates is a result of different methodologies used by various scientists? What accounts for the different estimates as to how many snapper we have, for example?

Dr. SCHAEFER. Sometimes that is the case, and methodologies do vary, and methodologies are always being improved. And I am not familiar with the specifics of the red snapper situation in terms of the methodologies, but that is an issue that I know is very important to you and to constituencies in the Gulf region. And I will take that very seriously if I am confirmed, and try to ensure that we are using the best available science to develop those assessments.

Senator WICKER. Very good. Let me then pivot to the dead zone in the northern Gulf of Mexico. We understand that it is expected to be the largest in history this year. Can you enlighten the Committee about the dead zone in the northern Gulf? How do you plan to work with other agencies and academic institutions to deal with complex problems, such as the dead zone?

Dr. SCHAEFER. The dead zone and other challenges in the Gulf of Mexico, I think, will benefit from the work that you and others have done on the Committee through the RESTORE Act to provide additional funding to look comprehensively at what is happening in the Gulf of Mexico.

I did work on the Gulf of Mexico hypoxia issue, the dead zone issue, more than 15 years ago when I was at the Department of Interior, and I have been down to the Gulf regions for meetings on that subject. I am very interested in it. Even then, there were some fundamental differences of opinion as to what the true source of the problem is, and I know that some of that stands today.

I look forward to working on that issue. The key point, and you have referred to this, is that there are scientific assets, so to speak, throughout the Gulf region, whether they are in universities, in State agencies, in Federal agencies, or elsewhere. And the challenge is finding a way to knit those capabilities together to make sure that we are taking advantage of expertise wherever it exists,

and that we are developing a comprehensive view of what is going on in the Gulf of Mexico.

Senator WICKER. Is there a consensus as to the cause of the dead zone? What are the various viewpoints? You say that there seems to be a difference among scientists about this.

Dr. SCHAEFER. Well, one thought is that because of nutrients that are entering the Mississippi River, up along the river in the many agricultural areas, that that is actually a causative factor in the dead zone.

There are a variety of forces that are clearly acting, and I think it is fair to say some of them still are not understood. I am hesitant, based on the information I had from some years ago, to say too much more than that, except to say that I am very interested in the issue, and I look forward to getting down there talking with scientists and understanding where things stand, and then doing what NOAA can to ensure that we both understand the problem and we can take actions to prevent it.

Senator WICKER. Thank you very much, sir.

Dr. SCHAEFER. Thank you.

Senator NELSON. Senator, my heart goes out to you, and to Senator Landrieu, and Senator Vitter, for the dead zone is the size of Delaware, off your states.

Now, we have enough trouble in Florida with dead zones of polluted water being dumped out of Lake Okeechobee, which it has to because the lake gets too high, and it threatens the earthen dam because of the pressure. But what it does is it creates a dead zone to the east in the St. Lucia River and to the west in the Caloosahatchee River. I have been out on that river 6 years ago when it was, in fact, a dead river. And the same thing is happening now because the water has gotten up to 15 feet high, and the Corps of Engineers is going to have to start dumping water out of there to avert a disaster of it breaking the dam and flooding all of these agricultural and populated areas.

I know what that river looked like when I went out there. It was dead. There were no mullet jumping. It was a dirty green look from all of the algae. There were no porpoises rolling. There was no osprey or eagle flying to get their dinner. And I just cannot imagine a dead zone the size of the state of Delaware off your and Louisiana state.

So, I want to help you, and I need help from you all as we try to clean it up. And it is being done through an Everglades Restoration Project, which we have it going on pretty good. It has been going on for 20 years. It is going to take a lot more time. But you have got an emergency, and I want to help you.

Senator WICKER. Well, I appreciate, Senator Nelson, you—I appreciate your concern and your assurance. And we will certainly look to you and others for assistance in this regard, as well as looking to NOAA for the facts and the science. So, thank you.

Senator NELSON. Now, with regard to your questions on the fisheries, thanks to your help, you were a co-sponsor of the RESTORE Act. Once the judge makes his decision on what the fine is going to be, that money is going to flow pursuant to the law that we pass called the RESTORE Act. And two and a half percent of that total is going to go to try to address exactly the question that you an-

swered—that you asked, which was, what is the fish population out there? And making those assessments through the National Marine Fisheries Service, helped by the commission that was set up by the RESTORE Act, in order to have up to date data on what the fish population is so that we do not go through what we have been going through, where decisions are made to cut off a fishery with outdated data, data that is six and seven years old. And that is one of the benefits of the RESTORE Act.

So, Dr. Schaefer, tell us what you think about it since you are going to be working directly with the National Marine Fisheries Service about utilizing that two and a half percent of the RESTORE Act.

Dr. SCHAEFER. Well, I think it is a tremendous opportunity to develop a much more comprehensive picture of the pressures on the Gulf ecosystem, the pressure on the fisheries there, and to integrate scientific efforts across universities, State agencies, and the Federal Government. Also, there will be an opportunity to develop a much more comprehensive understanding of the complexities of that system, and it is very complex because, as Senator Wicker pointed out, there is a very large dead zone.

It has been very challenging to try to address that issue, and we simply need more information. We need more expertise in general in tackling the kinds of problems that you described in the Everglades and elsewhere in Florida. We need to make sure that we are taking advantage of the talents that exist throughout our country, and that we are coupling our capacities in Federal agencies with the outstanding expertise that exists in our universities. And there has been a long track record at NOAA of working collaboratively in this regard.

I would like to continue with that if I am confirmed, and make sure through activities like the RESTORE Act, where NOAA will have some substantial funding, to make sure that we are using that expertise, and that we are building a solid framework for decisionmaking.

Senator NELSON. OK. That is good. Now, Senator Rubio and I are going to have a hearing in a couple of weeks down in famous Apalachicola Bay, which used to be known and has been known over the centuries as some of the finest oysters. That is being threatened. It is being threatened by a number of things, not the least of which the lack of fresh water coming down the river that starts the Chattahoochee River up north of Atlanta. And this fishery collapsed last year, long-term drought plus the lack of the fresh water coming down the river, illegal harvesting. Twenty-five hundred jobs were impacted. We are going to bring attention to this, Senator Rubio and me.

Now, it is my understanding that NOAA needs information to document a fishery failure before it can declare an emergency. So do you have information on this that you can update us on the status of this declaration?

Dr. SCHAEFER. Since I have not worked within NOAA in recent years or within the Federal Government, I do not have access to the specifics on that issue. But I know that it is a very significant problem, and I know it is very important to your constituencies. I am committed, if I am confirmed, to making sure that NOAA uses

all of its capabilities to understand the nature of that problem, and that, if it makes sense to make a disaster declaration, that we have the scientific basis for doing so. I would be happy to look into it.

Senator NELSON. OK. Well, we are going to help you along by virtue of the hearing that we will have coming up in the early part of August down there.

Senator Ayotte?

**STATEMENT OF HON. KELLY AYOTTE,
U.S. SENATOR FROM NEW HAMPSHIRE**

Senator AYOTTE. Thank you, Chairman. Appreciate it. Thank you, Dr. Schaefer. Appreciate your being here.

And I think as I walked in, I heard the chairman talking about how do we determine how much fish or other types of aquatic life we have in an area. And this is an issue that I am very concerned about in the Gulf of Maine, that we have had a situation, particularly with the cod and had a stock in the Gulf of Maine, that as a result of actions taken by NOAA—in fact, yesterday I was questioning Administrator Bullard about this issue, that our fishermen have gone through this year a 78 percent cut in what they can fish for in their quota for the Gulf of Maine—in the Gulf of Maine for cod. And you can imagine what that does to a small fishing boat. In fact, many of them have gone out of business.

And one of the issues that was touched upon in the hearing yesterday is that the need for—in fact, the head of the New England Fishery Management Council reiterated this. The need for better data and research to be able to know exactly, you know, what stocks exist, and to put us in a position where, you know, these people who are small fishermen and women who have been put out of business, many of them have done this for generations. And you can imagine it is sort of part of our tradition. We are very proud of them.

And so it is an issue that I am very concerned about because there is a lot of feeling that the science behind it is that we have not adequately developed it to really understand where things are. And so, I wanted to get your thoughts on that because it seems to me that we need to do better research so that we can strike the right balance so that, you know, people who have made their livelihood, I think, responsibly off the seas for years, trying to do the right thing, can continue to do that, while we make sure that we have obviously adequate stocks.

Dr. SCHAEFER. Thank you for that question, Senator. I know that the fisheries in New England are extremely important to the economies of those States, important jobs, a wonderful livelihood that is actually iconic really—

Senator AYOTTE. Right.

Dr. SCHAEFER.—in New England. I lived in Massachusetts, and I learned that as a young person. And I know that when Federal agencies work with fishery management councils, they are making real decisions that affect real people. And I am very sensitive to these types of issues.

Stock assessments that you are referring to, that is a common theme that we are encountering on our coasts. The frequency of our stock assessments, I think, is something that we should step back

and take a look at. Of course, doing them and doing them well does require supporting those who are doing them. And we need to make sure we have adequate resources, that we are leveraging capabilities both within Federal agencies, and in universities, and State agencies to make sure that we are—and with the information that the fishermen are providing, so that we have a solid understanding of what is there.

It is an extremely important issue, and I realize a reduction of that magnitude has a major impact on individuals.

Senator AYOTTE. Anyone who is running any kind of business, if they saw a 78 percent reduction—I mean, it is hard to see how they would survive, and particularly those who have made their way on the seas for years and generations.

Dr. SCHAEFER. Yes. And, again, I am very sensitive to that, and the regional administrator I know has been grappling with this and definitely lays awake at night worrying about it.

I will make it a high priority, if I am confirmed, to make sure that we are bringing the best science to bear, and where there are deficiencies, that we are communicating that to the Committee so that we can work together to find a way to resolve those things.

Senator AYOTTE. Well, I appreciate that. That is very important to all of us in New England, and that you would give a commitment to that issue to make sure that what we are doing in research is adequate, and if we need to obviously put a greater emphasis on it, if you communicate that with the Committee, I certainly look forward to working with you on that. So, thank you, Doctor.

Dr. SCHAEFER. Thank you, Senator.

Senator NELSON. Senator Scott?

**STATEMENT OF HON. TIM SCOTT,
U.S. SENATOR FROM SOUTH CAROLINA**

Senator SCOTT. Thank you, sir. Dr. Schaefer, good to see you this morning.

Dr. SCHAEFER. Thank you, Senator.

Senator SCOTT. I recently on Monday had a meeting with a lot of my guys in the fisheries business, and my question really is very similar to Senator Ayotte's question. I would love for you to come down to South Carolina and take a look off the coast so you can have an appreciation for the reality that we, at least at home, believe that we need more sound science to show the reality of the oceans. And we would love for you to come down and participate in an offshore discovery opportunity.

I will say that one of the questions I thought was important that my fishermen were asking had to do with the fact that their livelihood is not a today-only livelihood. There are actually multiple generations in the business, and they have started restaurants and succeeded. One specific company, Crosby Seafood, spent a lot of time just helping me understand what it takes for them to help create the wonderful tourism that we have on the coast. We bring about \$30 million tourism in from Myrtle Beach through Charleston and Hilton Head.

Much of our tourism is driven by our restaurants. Charleston has been fortunate to be the number one tourist destination in the world, according to *Conde Nast* magazine. And part of that is be-

cause of the success of our restaurant business. There is a company—a restaurant, *Husk*, number one new restaurant in 2011 in all of America.

They set their menus at midnight, and I am not sure if I have this exactly as they said it, but this is basically how it happens. They get a text from the satellite that tells them what is going to be available, and then they set their menu for the next day because every day they try to change their menu.

And there are certain things that you cannot get during season, so in March and April, it is very difficult to get any red snapper because of the limits. Also, in addition to red snapper, there is a grouper limit. And they say that the limits are inconsistent with what is available in the ocean.

So my question is, as we have driven our economy in South Carolina, especially on the coast of South Carolina, with tourism because of our restaurant business, which is then driven by what is found in the oceans, it would be very important for us to have an opportunity for you to come down and help us understand the process that you would take to uncover what NOAA really needs to do in order to understand what is happening off of the coast of South Carolina.

Dr. SCHAEFER. I would welcome the opportunity, Senator. And just for the record, I have been one of those tourists that comes down to Myrtle Beach and have spent many hours body surfing off the coast there. And my son, Greg here, went to Coastal Carolina University just in Conway there. So we had the opportunity to visit then.

Senator SCOTT. Yes.

Dr. SCHAEFER. I recognize how important tourism is to South Carolina and to so many other States. It is critical to the Gulf. It is critical to New England, and the West Coast, and Hawaii. And we want to make sure that we have resilient coastal resources, that we understand what we have, that we understand what the threats are to those resources, that we are doing the very best we can to ensure that with respect to fisheries, we know what is there, we know what the trends are, and what the pressures are on those resources. And all of that requires this sound scientific foundation that you are referring to.

We also, as you may know, Senator, have—NOAA has the Coast Services Center there in Charleston, which has the focal point for bringing information together about the status of our coastal and marine resources. And that is a remarkable facility in your backyard.

Senator SCOTT. On James Island, I have been there a couple of times, and it really is a great resource for us.

The second question I have for you, and it is really more of a comment than it is a question. The President's Executive Order implementing a new national ocean policy gives NOAA responsibility for over 130 items without any specificity with respect to new regulations, or new regulatory actions, or legal authority that has been spelled out.

And so, my real question is, one of the concerns that we have is that with that large footprint, without any clarity that would be provided by legislation, we find ourselves in a position where it

seems like the Federal reach would go beyond where it has been. It goes into our inland, our lakes, and ponds, our rivers.

I would love to have your comment on how to go about building a policy that creates clarity, and ensuring that the bureaucracy does not start creating legislation essentially by rulemakings.

Dr. SCHAEFER. One of the challenges we have—well, it is both a strength and a challenge, that our environmental—the Nation’s natural resources and environmental laws have evolved over many years. And they have goals and objectives that sometimes overlap and sometimes compete with each other. And so, we have the strongest network in the world for ensuring the viability of our resources.

But at the same time, there is a tension there, and it is difficult at times to see the big picture and understand the interconnectedness of the various regulatory mandates and the impacts that they have in the real world on small businesses, large businesses, fishermen, and so on.

I know—you asked a complex question, and it is one that I would be very interested in looking into and working with you on. I will say in general that I believe that a Federal agency needs to be very careful any time it takes a step to enhance or institute a new regulatory program. You need to understand the impacts of that. And there is an entity within OMB that helps to make sure that agencies do understand the impacts, and we are being thoughtful about any new regulations that we devise. So I am sensitive to it, and I am committed, if I am confirmed, to paying attention to that.

Senator SCOTT. We hope to have the opportunity, if you are confirmed, to work with you on what we would define as a Federal overreach, and define some limits on how to gather the information in such a way that it makes it all work together and creates connectivity without the Federal Government becoming in charge of what we believe is important to remain in the hands of states and local jurisdictions.

Dr. SCHAEFER. Thank you, sir.

Senator SCOTT. Yes, sir. Thank you, Mr. Chairman.

Senator NELSON. Further questions?

[No response.]

Senator NELSON. Well, Dr. Schaefer, thank you.

I want to remind the colleagues that—and NOAA that we have agreed on an expedited process for questions for the record. So for the Committee members, please have your questions submitted by the close of business tomorrow, July 25. And, Dr. Schaefer, the Committee asks that your response to these questions be submitted by 10:00 Monday morning.

We hope to vote on your nomination at the Committee’s Executive Session on Tuesday, July 30. And so, if we can expedite this process, it will enable us to go ahead and vote on your nomination.

Thank you for being here. Thanks to the Committee for its participation.

The meeting is adjourned.

Dr. SCHAEFER. Thank you, Senator.

[Whereupon, at 10:44 a.m., the hearing was adjourned.]

A P P E N D I X

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO
DR. MARK E. SCHAEFER

International Pacific Halibut Commission

Question 1. The Department of Commerce oversees a number of key nominations and appointments at the National Oceanic and Atmospheric Administration. Mr. Bob Alverson, a halibut fisherman from Seattle, was nominated to be a Commissioner on the International Pacific Halibut Commission for the non-Alaska seat. Recreational, commercial and tribal Pacific halibut fisheries provide jobs to fishers, outfitters, processors, seafood retailers and shipyards throughout the Pacific Northwest. According to the International Pacific Halibut Commission's Annual Report, the sport halibut fishery is second only to salmon, with landings reaching over 370,700 pounds in 2010. In addition, the commercial halibut catch on the West Coast was 407,600 pounds supporting many commercial fishing jobs both in our coastal communities, in the Puget Sound and in ports up the Columbia River.

Despite Pacific halibut's importance to our coastal economies, the Department of Commerce has failed to appoint commissioners. Mr. Alverson has been waiting over a year and a half to hear from the Department.

Mr. Schaefer, when confirmed, will you select a commissioner for the International Pacific Halibut Commission? By what date will you have commissioners selected, and notified of their selection? In your role as Assistant Secretary, how will you prevent long, costly, drawn out appointment processes at the Department of Commerce in the future?

Answer. While I am not familiar with the specifics of this Commission, I do understand the importance of this to you and your constituents. I am also sensitive to the appointments process and how lengthy that process can be. If confirmed, I will get up to speed on the specifics of this particular process and work with the White House, who makes the final appointment, to make sure the process moves forward.

Shark Finning and NOAA Overreach

Question 2. Shark populations globally are declining at alarming rates. My home state took action on this issue by passing a law in 2011 to ban the possession and sale of shark fins—the market for which drives overexploitation of sharks worldwide. We joined a growing number of states in recognizing that the main way to combat the global slaughter of sharks is to remove the market for, and trade in, shark fins. In May of this year, however, the National Marine Fisheries Service (NMFS) issued a proposed rule in which the agency articulated a view for the first time that state laws like Washington's may be preempted by the recent Shark Conservation Act of 2010. My question for you relates to the way in which the agency handled itself in this matter.

Dr. Schaefer, federal agencies are required under Executive Order 13,132 to engage in a consultation process with states whose laws may be affected, when the agency intends to preempt state law. *NMFS failed to consult with my state, and any other state, before issuing its proposed rule on shark fins.* Please explain how the agency was able to do this. Furthermore, will you give me your commitment that this will not happen under your leadership?

Secondly, now that the consultation process has slowly started in both Washington and California, *Dr. Schaefer,* currently California's shark fin law, which is similar to Washington's law, is subject to litigation. Private parties from industry have challenged the law, and the State of California and intervenors are defending the law. On Monday of this week, the U.S. Department of Justice filed an amicus brief in the Ninth Circuit Court of Appeals, *taking the position on behalf of NMFS that the California law is preempted by Federal law.* I am not weighing in on ongoing litigation, but I want to understand how NMFS has been conducting business between interested parties.

- NMFS is currently engaged in consultation with the State of California, just as it is with the State of Washington, “in an effort to avoid . . . a conflict” between state and Federal law that would result in preemption. *Executive Order 13,132, 64 Fed. Reg. 43,255, 43,257 (August 10, 1999). Please explain why this aggressive action in the courts—which flatly denies any compatibility between state and Federal law—does not undermine the consultation process required by Executive Order 13,132 as a way of collaboratively avoiding conflicts between state and Federal law?*
- *Can you ensure that NMFS will conduct itself in a more measured way with respect to preemption, following through with a full consultation process before taking litigation positions, under your leadership?* You should know, that this type of behavior from NMFS regarding legal opinions and non-legal “white papers” (which are non-legal, legal documents prepared by lawyers) is a pattern which creates enormous uncertainty in our states, and with our stakeholders.

Answer. I am not familiar with the complexities of this specific issue, but I can assure you that my practice in any position I have held has been to hear from all interested parties to make sure all sides of the issue are heard and at least taken into account before a final decision is made. If confirmed, I will make sure I fully understand this issue and set up a process that will ensure all views are heard and considered in a timely manner moving forward.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. RICHARD BLUMENTHAL TO
DR. MARK E. SCHAEFER

Question 1. I keep hearing that NOAA’s research budget keeps getting slashed, and at the same time that we have pressing needs for data and important questions we need to answer—whether it is questions about the status of fish stocks or what acidification and climate change mean for our shellfish farmers in Connecticut?

How do you see NOAA accomplishing its core mission of informing important management choices in an era of declining research budgets?

Are the alternative revenue streams or budget cuts that can be made to allow NOAA to conduct the critical research that needs to be done?

Answer. This is a question many Federal agencies have to face in this challenging budget environment. If confirmed, I would work to ensure the agency takes a hard look at its core missions and what is needed to sustain these at an adequate level, while leveraging partnerships with academia and industry to make sure the best available science informs the agency’s decisions.

Question 2. Strict new rebuilding requirements, coupled with the annual catch limit mandate, create problems achieving sustainable yield for healthy stocks co-harvested in fisheries where some catch of rebuilding species is inevitable. In such instances, rebuilding stocks become “choke” species, preventing full harvest of healthy stocks and creating allocation battles. The problems Georges Bank yellowtail flounder are causing for New England haddock and scallop fishermen illustrate the situation. For instance, even though Georges Bank haddock is highly abundant, only a small fraction of its annual catch limit can be harvested. Likewise, yellowtail by-catch limits are driving scallop management decisions. Indeed, increasingly small yellowtail flounder allocations to the scallop fishery and associated accountability measures risk closing the scallop fishery in highly productive areas on Georges Bank. Conservation is important to our fishing communities, but so is the need for abundant stocks to be harvested. What steps are NOAA Fisheries and the fishery management councils taking to help ensure that fishermen have access to abundant resources, such as scallops and haddock?

Answer. I am aware of steps NOAA has taken to increase the industry’s access to healthy stocks. These include proposing to re-open areas closed to fishing to facilitate harvest of healthy stocks, lowering the minimum sizes of some stocks to reduce discards and increase revenues, and encouraging the exploration of new gear types by issuing exempted fishing permits.

Question 2a. What flexibility can be added to the Magnuson-Stevens Act to better balance conservation with access to abundant resources, such as scallops and haddock?

Answer. Striking this type of balance is important and requires consideration of input from a broad range of interested parties. If confirmed, I look forward to learning more from you and your colleagues, the Councils, state agencies, universities, tribes, and the fishing industry about this particular dimension of this important piece of legislation. I will work to develop strategies and priorities for any reauthor-

ization legislation that will safeguard the progress it has enabled, and seek to develop innovative solutions to improve it.

Question 3. We have been successfully reducing over-capacity issues in our fishing fleets for nearly two decades.

Are we nearly where we need to be in terms of matching the fleet's capacity with sustainable harvest levels or are further cuts going to be required? Are there other sectors where we could be putting displaced fishermen to work? When there was a net ban in Florida, training programs ushered in millions of dollars of new clam farming production.

Should we be re-training fishermen to grow mussels or seaweed? What can NOAA do to streamline permitting for mussel farms in Federal waters? We import millions of dollars of mussels from Canada.

NOAA has determined that the Magnuson-Stevens Act gives it authority to regulate shellfish aquaculture activities in Federal waters. Are there any shellfish aquaculture experts or representatives on the Regional Councils? Should the Regional Fisheries Management Councils have any regulatory authority over shellfish aquaculture permitting?

Answer. These are important questions and issues that deserve close study, and I am committed to looking into them. As I have already stated, if confirmed, I look forward to learning more from you and your colleagues, the Councils, state agencies, universities, tribes, and the fishing industry about this important piece of legislation, and how these issues fit in the picture of its reauthorization. I will work to develop strategies and priorities for any reauthorization legislation that will safeguard the progress it has enabled, and seek to develop innovative solutions to improve it.

Question 4. One of the issues that I hear about from shellfish farmers in Connecticut is that certain environmental regulations can pose challenges for shellfish permitting, which is a big industry in my state.

For instance eelgrass is protected as "essential fish habitat" under Magnuson-Stevens Act. Yet I hear from scientists that shellfish aquaculture provides many of the same ecosystem benefits that eelgrass provides, including improvements in habitat and water quality.

Should we move away from a policy that mandates "no net loss of eelgrass"—to one that says "no net loss of ecosystem function"?

Is there a way for us to preserve biodiversity and ecosystem services while creating new jobs and providing sustainable seafood as well?

Answer. My career has focused on ensuring that strong, solid science informs the best policy decisions we can make for our environment and our economy. Preserving biodiversity and ecosystem services is precisely the way to ensure strong coastal economies where jobs rely on tourism, marine resources, resilient coastal communities, and healthy ecosystems. If confirmed, I look forward to learning more on the reauthorization of the Magnuson-Stevens Act looking for ways to provide opportunities to balance resource use with conservation.

Question 5. Information collected by fisheries observers represents an important source of data for fishery conservation and management. For instance, observer data is used in many fisheries to track a fishing fleet's level of bycatch against its overall bycatch limits. Certain fishermen, such as scallop industry participants, are required to pay for their own observers, and that can be very expensive. I understand it can take many months for NOAA Fisheries to be able to compile and analyze data obtained from observers so these data can be used to estimate bycatch levels. As a result, fishermen can end up "flying blind" during the fishing season in terms of knowing where their catches are in relation to bycatch catch limits.

What more can NOAA Fisheries do to ensure observer information is accurate?

What more can NOAA Fisheries do to ensure that observer information is available in time to be useful to the fishermen who are paying for it?

Answer. I understand that there can be time delays in inserting observer data into the process that determines catch limits simply because paper records have to be entered into computer systems. This is one reason so many are interested in implementing electronic monitoring in fisheries where it makes sense for fishermen and the fishery. One advantage of electronic logbooks is the rapid transmission of data. If confirmed, I look forward to working with the fishing industry and Congress to see these efficiencies implemented where possible so fishermen can have more certainty in their business operations.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN THUNE TO
DR. MARK E. SCHAEFER

Timely communication with Congress

Question 1. Questions for the record—like this one—are an important way for our Committee Members to more deeply understand the positions of the Departments and agencies over which we have jurisdiction. We hope that those Departments and agencies view the responses to those questions as an opportunity to further educate Members about their challenges and views.

The National Oceanic and Atmospheric Administration (NOAA) has not been as responsive to this Committee as many of us expect. In the 112th Congress, there was one instance in which NOAA failed to provide answers to questions for the record; ten months after the questions were submitted to the agency, the hearing record was closed and the following acknowledgement was printed in the hearing record: “Although Committee Members submitted written Questions for the Record to Dr. Jane Lubchenco following the March 7, 2012, hearing, NOAA did not provide responses to the Committee before the hearing record was closed on January 25, 2013.” This Congress, we are still awaiting answers to questions for the record sent on April 3, 2013, following a March 19 fisheries hearing.

In addition, some of my fellow Senators have written to the agency to inquire about the status of issues important to their states and have not received timely responses. For example, my colleagues from Georgia wrote to the agency in April to seek an update on the status of a permit application; they have not yet received an answer.

If you are confirmed to be Assistant Secretary of Commerce for Oceans and Atmosphere, will you do your best to ensure that communications between NOAA and our Committee and its Members are timely and accurate? In particular, I would appreciate responses to substantive questions for the record within no more than three months; in cases where official responses on that timeline are impossible, I would appreciate the agency to communicate the reason for the delay to the Committee.

Answer. I know communication with Congress is an important function for the position for which I am nominated. If confirmed, I will absolutely do my best to ensure communications between NOAA and the Committee are timely and accurate. If we are not able to meet certain deadlines, I will commit to communicating clearly with the Committee as to why.

NOAA Reorganization

Question 2. In 2008, you were lead author on a paper, “An Earth Systems Science Agency,” published in *Science*. In this article, you and your coauthors advocate for the establishment of an “independent Earth Systems Science Agency formed by merging the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Geological Survey (USGS).” Do you still think that realigning Federal earth systems science agencies, including NOAA, would best position the U.S. to address future environmental challenges? Further, if such a reorganization were to take place, what would be the fate of the fisheries functions of NOAA, for example the National Marine Fisheries Service (NMFS), taking into account studies such as the Government Accountability Office’s 2013 “Potential Benefits and Drawbacks of Merging the National Marine Fisheries Service into the Fish and Wildlife Service” (GAO-13-248)?

Answer. I and several colleagues wrote that paper a number of years ago strictly from the viewpoint of an optional approach to aligning earth science activities. I am fully aware of how much time and effort goes into any type of reorganization, especially if it is done correctly. If confirmed, I will focus on ensuring NOAA’s expertise continues to support vibrant coastal economies and complements the work of other Federal agencies.

Question 3. Should you be confirmed, how would you ensure that NOAA’s employees are encouraged to express concerns about financial or other mismanagement issues at the agency, and that those concerns are taken seriously and investigated in a timely manner by the appropriate members of NOAA’s management team?

Answer. If I am confirmed, I will work with the Commerce and NOAA General Counsel’s offices to be sure that NOAA employees in the offices I oversee are aware of their rights and responsibilities with respect to financial and other management matters, including the procedures for properly reporting concerns about possible waste, fraud, abuse, or other concerns. I will also ensure that managers are informed of the procedures for addressing these concerns in a timely manner, including when it is appropriate to notify others in the department or elsewhere of reported issues.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. ROGER F. WICKER TO
DR. MARK E. SCHAEFER

Question. I am concerned regarding a recent trend of a lack of communication and responsiveness between NOAA and Congressional offices.

Dr. Schaefer, over the course of the last year, members of the Senate and staff of this committee have been in contact with NOAA and the National Marine Fisheries Service (NMFS) regarding an application submitted in June of 2012 by Georgia Aquarium for the importation of beluga whales from Russia. Following extensive engagement between the Aquarium and NMFS, an extended period of public comment and expectations provided by the agency to the Aquarium of a decision throughout the winter and spring. But to date, despite bipartisan outreach from Congress and direct engagement with agency leadership by the Aquarium, no decision has been made on the permit, and no indications have been provided to the petitioner of when a decision can be expected.

Members are concerned that the agency has failed to officially respond to multiple letters from the Congress requesting a status update and an inability to provide certainty or detail to the petitioners regarding the status, concerns or when to expect a decision. More troubling is that this is not a unique situation. The Institute for Marine Mammal Studies and the Mississippi Congressional delegation had to send multiple letters to NOAA on their unrelated application for any action to take place.

How do you plan to improve the responsiveness of the agency to Congress?

Answer. I firmly believe that open communication and responsiveness are key to any decision, especially the difficult decisions I know I will face if confirmed. I look forward to learning about the specific issues surrounding these communication challenges and working with you on ways to improve responsiveness on these issues and others, if confirmed.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARCO RUBIO TO
DR. MARK E. SCHAEFER

Question 1. Mr. Schaefer: Your predecessors at NOAA—former Administrator Jane Lubchenco; former Acting Asst. Secretary Eric Schwaab, and Acting Assistant Administrator Sam Rauch—all publicly acknowledged (repeatedly) problems with allocation of fishery resources between commercial and recreational fisheries. One said allocation was “rusted shut.” Another noted that allocations were “frozen in time 30 years ago.” All pledged to do something to fix these institutional inequities. Are you going to do something about the problems of allocation?

Answer. If confirmed, I will commit to looking into the allocation issues and reach out to all interested parties to hear ideas about how best to approach fixing the issue.

Question 2. Mr. Schaefer: My home state of Florida is the epicenter of marine recreational fishing that generates an annual \$17 billion economic impact. From the NOAA conference in May of this year to congressional hearings on both sides of the Capitol, we are hearing the stark truth: that the Magnuson-Stevens Act is not working for recreational fishing; that strict interpretation of MSA combined with Federal budget constraints atop a lack of scientific data yielding business-crushing uncertainty. All these are ingredients in a recipe for disaster in coastal angling towns across the Sunshine State. How will you help the Department of Commerce ensure that the Magnuson-Stevens Act will start working for recreational fishing?

Answer. I understand that NOAA has strengthened its focus on and relationship with the recreational fishing community in recent years. If confirmed, I pledge to carry that positive relationship forward. I believe success occurs when all parties are at the table and, if confirmed, I will ensure that the recreational community has a seat at the table as conversations about the next reauthorization of the Magnuson-Stevens Act occur.

Question 3. Mr. Schaefer: Red snapper management in the Gulf of Mexico is broken. It reached an all-time low this year with the Federal courts rejecting NMFS’ discriminatory tactics. The Gulf governors have called on Congress to allow their states to manage this important fishery resource. As you know, the states have an impressive track record managing fisheries. Do you support the governors’ request to send red snapper management to the states?

Answer. I know this is an important fishery for your state as well as the region. From what I understand, while challenges remain, there have been positive developments including an increased allocation for fishermen. However, I am also aware that this is a complex issue and there are a couple of lawsuits currently pending with NOAA. If confirmed, I will make sure I get the specifics of the history leading

up to this point and work with Congress, the Administration and the industry on this important issue.

Question 4. As you know, accurate and up-to-date science is essential for proper fishery management. May I get your commitment to make data collection a priority within the agency?

Answer. Accurate and up-to-date science is the foundation for the proper management of any resource, especially fisheries. If confirmed, I will work hard to make sure our decisions are based on strong science and that proper data collection remains a top priority for the agency.

Question 5. NOAA recently proposed listing 66 coral species as endangered species by estimating the health of the species over the next 100 years. While I understand we are in the early stages of the process, I am concerned about the potential economic impact this listing may have on recreational fishermen and businesses in Florida. May I get your commitment to work with my office as the agency moves forward with this listing?

Answer. I know complex decisions like this can have far-ranging economic impacts, which need to be considered in the decision process. However, I know that protecting our coastal areas and resources, including corals, is critical for maintaining healthy tourism, fisheries and other economic opportunities. If confirmed, I commit to working with Congress, stakeholders and the Administration as the agency considers the proposed listing.

Question 6. As you know, the Subcommittee has begun the process of working to reauthorize the Magnuson-Stevens Act. Should you be nominated what policies would you highlight and prioritize in the reauthorization?

Answer. If confirmed, I look forward to learning more from you and your colleagues, the Councils, state agencies, universities, tribes, and the fishing industry about this important piece of legislation. I will work to develop strategies and priorities for any reauthorization legislation that will safeguard the progress it has enabled, and seek to develop innovative solutions to improve it.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. KELLY AYOTTE TO
DR. MARK E. SCHAEFER

Question 1. Dr. Schaefer, NOAA has had a long and very successful history of collaboration with the academic community through cooperative agreements and institutes. For example the Joint Hydrographic Center at the University of New Hampshire has provided NOAA and the private sector with software tools for hydrographic surveys, has found applications in fisheries research, has aided in the mapping of the U.S. outer continental shelf, and has supported the Nation's response to the *Deepwater Horizon* oil spill. What are your views about the role of these cooperative research centers today and in the future?

Answer. I believe that policy decisions should be founded on the best science available which is created by bringing together the best expertise. Cooperative research centers play a role in making that happen, as do other types of research performers. If confirmed, I look forward to working with NOAA, the industry, our external partners and Congress to ensure our science is collaborative and strong.

Question 2. Dr. Schaefer, as Assistant Secretary of Commerce for Oceans and Atmosphere, you will play an important role in coordinating the efforts of NOAA's partners and stakeholders in the Gulf of Mexico in the wake of the *Deepwater Horizon* oil spill. As you know, NOAA's role in spill response and restoration requires that its scientists and responders provide other Federal partners with the best available scientific advice on the spilled oil's fate, behavior and effects.

In your role as Assistant Secretary, could you outline for the Committee how you propose to ensure that NOAA scientists and spill practitioners keep abreast of the findings of these very large and disparate research efforts, and have the opportunity to translate them into improved response, damage assessment and restoration?

Answer. NOAA has valuable expertise regarding oil spill response and restoration and I'm familiar with the important science and expertise that is housed at the University of New Hampshire. If confirmed, I will work to ensure that NOAA continues its valuable collaboration with academic partners like the University of New Hampshire to continue to provide the best oil spill response and restoration resources possible so the Nation can be well prepared for any future events.