IN SUMMARY: RT4

Promoting Lifelong Ocean Literacy

ON FRIDAY, JUNE 3, 2005, the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service's (NOS) Assistant Administrator Richard W. Spinrad, PhD, hosted the fifth NOS Constituent Roundtable titled, "Promoting Lifelong Ocean Education." The meeting was held at the Reagan Building in Washington, D.C. and included twenty-eight constituents, representing many of the education and outreach partners of NOS, and representatives from NOS and NOAA.

OPENING REMARKS

In his opening remarks, Dr. Spinrad welcomed the participants and noted that this roundtable was part of a series of roundtables designed to discuss with constituents NOAA's diverse mission responsibilities. Dr. Spinrad explained that he was at the roundtable as both a representative of NOAA's Ocean Service and as co-chair of NOAA's Ocean Council.

Dr. Spinrad discussed the structure and importance of the U.S. Ocean Action Plan in furthering ocean literacy, and how NOAA is working to implement it. The plan includes 44 specific actions that range from ocean leadership to promoting lifelong ocean education. The administration has developed a Commission on Ocean Policy to implement the plan. Two subcommittees—the Joint Subcommittee on Ocean Science and Technology and the Subcommittee on Integrated Management of Ocean Resources—have been established at the undersecretary level. NOAA is represented on both of these committees, which are working jointly on an "education agenda" that will include a defined plan of action and established milestones for determining success.

Dr. Spinrad introduced Dr. Marlene Kaplan, acting director of NOAA's Office of Education and Sustainable Development. Dr. Kaplan highlighted some of the educational opportunities that NOAA is providing, especially with regard to grants and funding. These include:

- *the new Environmental Literacy Grants program, which received 170 proposals in 2005; and*
- *the Ernest Hollings Scholarship Program, which received 835 applications from 48 states and Puerto Rico in 2005, and funded $4 million in scholarships.*

Before turning the floor over to the participants, Dr. Spinrad highlighted some of the work that NOAA is doing right now to further the ocean "education agenda" including:

- *the NOS Discovery Center;*
- *the Ocean Explorer program and Web site;*
- *the educational activities of the National Marine Sanctuary Program ;*
- *NOAA's collaboration with the Smithsonian's Ocean Hall ;*
- *NOAA's partnerships with the National Science Teachers Association ;*
- *National Estuaries Day and EstuaryLive programs; and*
- *American Meteorological Society's Datastreme and Maury Projects.*

ROUNDTABLE DISCUSSIONS

Participants then discussed their views on ocean education and how NOAA can contribute to the effort. Comments were varied but they generally fell into three common themes—collaboration and connection, use of nontraditional methods, and the need for strong leadership.

Collaboration and Connection

Several participants noted that many ocean-related organizations are too focused on their own individual efforts, losing sight of the larger picture. Therefore, many participants stressed the need for developing and maintaining partnerships among organizations with ocean-related agendas to develop a common agenda and consistent message, and to streamline ocean education efforts. They noted that NOAA, NASA and the National Science Foundation, among other agencies, have similar interests, and therefore, should make more effort to form long-term partnerships in education. Such partnerships should be nurtured over the long-term, not just facilitated for short-term projects.

Participants also pointed out that the business community can be a valuable partner in furthering ocean education, especially if the "bottom line" is served. For example, the Adopt-a-Waterway Campaign partners with businesses that fund local environmental awareness campaigns in exchange for free advertising and a chance to improve their public images. In this arrangement, everyone gains.

Finally, participants acknowledged that NOAA grant programs are particularly useful for providing seed money to start collaborative projects.

Nontraditional Methods

Participants discussed the importance of formal education in furthering ocean literacy. For example, participants identified the value of cultivating relationships with local school district officials because they are the ones who decide what curricula to purchase, and which field trips are necessary. It is also important to directly provide teachers easy-to-use materials that are consistent with established standards. But some participants identified the inherent difficulties in working exclusively in the formal education area. For example, 30 to 50 percent of all teachers quit teaching after five years on the job. Oceanography or marine science is taught in only a fraction of schools and is not identified in the National Science Education Standards as a separate and distinct discipline. In addition, many children reject the study of science after 8th grade.

All of these factors reveal the need to put more energy into nontraditional education methods and informal education venues. For example, aquaria, museums and science centers are great informal settings for teaching ocean science to curious children and adults alike. These venues use a "storybook" method of inspiring visitors, combining education and fun to engage people in science, conservation and stewardship.

Participants reiterated the possibility that some ocean education programs are failing because they approach ocean science as an abstraction and do not adequately establish the connection between oceans and people. All ocean educators, formal and informal, need to make a better effort to emphasize what people really care about—their health, wealth and well-being.

Another nontraditional method involves the use of technology and integrating ocean messages into the popular media. Children are extremely technology-savvy and are the primary consumers of the gaming industry. Ocean educators should consider using these types of media to their advantage, rather than rejecting them as only for entertainment.

Need for Leadership

A common thread ran through most comments—the need for strong leadership in the ocean education effort. Many participants agreed that NOAA was in a good position to make a difference and increase ocean literacy because it holds so much rich data. NOAA needs to develop a more consistent educational message and should take the lead in energizing networks of ocean education organizations. It also needs to better organize its online information, and centralize its most important materials. Finally, it needs to package itself and its data better so as to be more useful to teachers and informal educators.

CLOSING REMARKS

In conclusion, Dr. Spinrad acknowledged participants' comments and the clear need for NOAA to take on a leadership role. NOAA must identify the needs of the ocean education community and work to fill these gaps. He also recognized the constraints under which teachers and educators operate, and the problems posed by high teacher turnover. He recognized that NOAA and other agencies needed to maintain partnerships and collaborative efforts, and that NOAA should not try to "go it alone." Finally, Dr. Spinrad acknowledged that NOAA needed to be self critical if it is to become a leader in the ocean community.