

**NOAA Education Strategic Plan Draft  
Public Comment Report  
August 14, 2008**

**Comments Received to Date:** 29 comments from 27 individuals

**NOAA Offices**

- Susan Haynes Office of Ocean Exploration
- Adam Smith National Climatic Data Center

**NOAA/Sea Grant**

- Stephen A. Bartone Minnesota Sea Grant College Program
- Rosanne W. Fortner Ohio Sea Grant College Program
- Karl E. Havens Florida Sea Grant College Program
- Jeffrey M. Reutter Ohio Sea Grant College Program (also on SAB EOEWG)

**SAB - Extension, Outreach and Education Working Group (EOEWG)**

- John Byrne Oregon State University (retired)
- Alan J. Friedman Museum Development and Science Communication, New York, NY
- Frank Kudma Metropolitan Sanitary District of Greater Chicago (SAB Member)
- Jeffrey R. Stephan United Fishermen's Marketing Association, Inc., Kodiak, AK

**K-12 Education**

- Jim Backus Brookfield, CT (active in The Maury Project)
- Dorie Davis Duval County Public Schools External Funding, Jacksonville, FL
- Pat Donahue Middle School, New Jersey (August 08 Teacher at Sea)
- Jennifer Joiner Dekalb County School System, Atlanta, GA

**Higher Education**

- Mark S. McCaffrey CIRES Education & Outreach, University of Colorado- Boulder
- John W. Nielsen-Gammon Department of Atmospheric Sciences, Texas A&M, College Station, TX
- Jorge L. Sarmiento AOS Program, Princeton University, Princeton, NJ

**Informal Education**

- Tom Bowman Bowman Design Group, Signal Hill, CA
- Lisa Brochu National Association for Interpretation, Fort Collins, CO
- Tim Merriman National Association for Interpretation, Fort Collins, CO
- Kim Morris-Zarneke Georgia Aquarium, Atlanta, GA
- Eileen Tramontana St. Johns River Water Management District, Palatka, FL

**Other Agency**

- Lisa Rom National Science Foundation, Arlington, VA
- David Ucko National Science Foundation, Arlington, VA

**Other General**

- Claude Almansi NOI Media, Geneva, Switzerland
- Carol Hildreth American Meteorological Society, Mechanicsville, NY
- B. Sachau Private Individual, Florham Park, NJ

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Public Comment Themes Synopsis  
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Engagement

Felt this is a missed opportunity to create an agency-wide engagement plan which combines education, outreach and extension goals. Do not feel Outcome 1.6 is sufficient to address the SAB report recommendations.

~ John Byrne, Alan Friedman, Frank Kudrna, Jeffrey M. Reutter, Jeffrey R. Stephan

Feels strongly that “Education” be the focus of this plan and leave extension and outreach to other planning efforts. ~ Rosanne W. Fortner

Outcome 1.5 Interagency - Outcome 1.6 “Intra-agency”

Reviewer suggested changing the title of outcome 1.6 to focus on INTRA-agency communications and strategies. ~ J. Adam Frederick, Susan Haynes, Kim Morris-Zarneke and other NMEA attendees

Education Definitions

These reviewers felt the way formal and informal education and free-choice learning were not well defined. Other ideas were provided for alternate definitions that better reflect literature and usage in other settings.

~ Rosanne W. Fortner, Alan J. Friedman, Tim Merriman, David A. Ucko

From 1982 Mocker and Spear Lifelong Learning Model

1. Formal Learning – the institution controls the objectives and means of learning
2. Nonformal Learning – the learner controls the objectives but not the means
3. Informal Learning – the learner controls the means but not the objectives
4. Self-Directed Learning – the learner controls both objectives and means

The Definitions Project

1. Formal Education/Learning - The hierarchically structured, chronologically graded ‘education system’, running from primary school through the university and including, in addition to general academic studies, a variety of specialized programs and institutions for full-time technical and professional training. (Adapted from The Encyclopedia of Informal Education, 2006)
2. Nonformal Education/Learning - Any organized educational activity outside the established formal system — whether operating separately or as an important feature of some broader activity - that is intended to serve identifiable learning clienteles and learning objectives. Adapted from The Encyclopedia of Informal Education, 2006
3. Informal Education/Learning - The truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment - from family and neighbors, from work and play, from the market place, the library and the mass media. (Adapted from The Encyclopedia of Informal Education, 2006)
4. Free Choice Learning - The type of learning guided by a person's needs and interests – learning people engage in throughout their lives to find out more about what is useful, compelling or just plain interesting to them. (Institute for Learning Innovation)

## Partnerships

- Strengthen language when referencing Federal Partnerships. ~ *Lisa Rom*
- Plan should have a greater identification and use of NOAA's University partners ~ *Frank Kudma and others*
- More emphasis on state, regional agencies and organizations. ~ *Kim Morris-Zarneke & Eileen Tramontana*

## Environmental Literacy

- Need greater urgency in your goal, outcomes, strategies and descriptions. ~ *Mark S. McCaffrey*
- Change references of “Environmental Literacy” to “Earth Science Literacy” to avoid stigma of an “environmental” movement. ~ *Rosanne Fortner*
- “NOAA's mandate is specifically ‘oceanic and atmospheric’ literacy”, consider tinkering with the wording of “environmental literacy.” ~ *Alan J. Friedman*
- How does teacher know Literacy Standards are not based on “Political Agenda”; More inland opportunities for ocean science ~ *Jennifer Joiner*
- Engage industry and NGO at the organizational level in climate literacy. ~ *Tom Bowman*
- Add consumer best practices to educational content on climate and ocean management ~ *Tom Bowman & Mark S. McCaffrey*
- Establish a national education advisory council of non-federal formal and informal education experts to assist with the implementation plan ~ *Eileen Tramontana*
- “Facilitating change in existing education systems will be a tough job,” run well document pilot programs to show applicability, not just added pressure on teachers who already have too much content to work into curriculum ~ *Pat Donahue*
- Clarify the fact that we are promoting “practical interdisciplinary decision making” and not just connecting citizens to scientific fact ~ *Tom Bowman & Mark S. McCaffrey*

## Workforce

- Build an elementary/middle school component into workforce development ~ *Jennifer Joiner*
- Interested in having a grant focused on workforce development of inter-global commercial waterway logistics management ~ *Dorie Davis*
- Plan does not address development of more science teachers just training of current teachers ~ *Pat Donahue*
- Plan weak in referencing graduate student opportunities and graduate education ~ *Jorge L. Sarmiento*
- The NWS is in a workforce development crisis and the plan does not address ~ *John W. Nielsen-Gammon*

#	Date Received	Sender	Comments <i>(Note: this is a synopsis of the key points made in the reviewers comments)</i>	Response Date	Response	Required Action
3	7/16	Almansi, Claude Geneva, Switzerland <a href="http://www.noimedia.org">www.noimedia.org</a>	Would like to see NOAA commit to upgrading all web products to conform to e-accessibility standards; pointed out bookmark errors In Ed Plan PDF	7/17	Thanked; pointed to DOC Web Accessibility Policies; e-accessibility would be considered in Implementation Plan; sent revised PDF with updated bookmarks; Update PDF on website	None
16	7/28	Backus, Jim Teacher <a href="mailto:jbackus8746@charter.net">jbackus8746@charter.net</a>	I as a teacher of 36 years have to say bravo for such a set of statements. I have been involved with NOAA over the years and have found that the relationships between such a government agency has been a wonderful chance for me to bring to my classroom the goals I have read in this paper. Most importantly that of workforce development. To bring in to my classroom the learning experiences of such a program as teacher at sea is priceless.	7/29	Thanks	None
23	8/8	Bortone, Stephen A., Ph.D., Director, Minnesota Sea Grant College Program Professor of Biology University of Minnesota 211 Washburn Hall 2305 East Fifth Street Duluth, Minnesota 55812 USA <a href="mailto:sbortone@umn.edu">sbortone@umn.edu</a>	Encouraged a shift from life-long education to instilling “a sense of discovery and self-motivational learning” using Discovery Channel’s “Shark Week” as an example of developing a “don’t miss” enthusiasm.	8/12	Thanks; suggested that “Free-choice learning,” as defined in the plan, has a similar intention to that which he described.	None
9	7/17	Bowman, Tom Bowman Design Group 1870 Obispo Ave. Signal Hill, CA 90755 562-494-3400 562-494-3440 (fax) <a href="http://www.bowmandesigngroup.com">www.bowmandesigngroup.com</a>	Via correspondence with Marlene; clarify the fact that we are promoting “practical interdisciplinary decision making” and not just connecting citizens to scientific fact; need to add engagement and education of the business community in literacy efforts – makes bigger impact	7/18	Marlene responded; thanked for comments	None

9	7/28	Bowman, Tom Additional Comments	Much more detail with references on Outreach opportunities regarding Climate Change: Engage the workforce at work; target industry/business with environmental literacy concepts; makes specific suggestions on programs and literature that will help people understand the cost of reducing their carbon footprint	7/29	Thanks; Forwarded to Frank Neopold	
9	8/6	Bowman, Tom Additional Comments	Additional Comments: “the general public and various organizations suffer from a lack of reliable information about the efficacy of various actions they might take” <i>to reduce carbon emissions</i> ; Create guidelines which show region GHG emissions; Conduct and fund research for end-to-end GHG emission inventories (life-cycle emission inventories)	8/6	Thanks	None
20	8/5	Brochu, Lisa, Associate Director National Association for Interpretation PO Box 2246 Fort Collins, CO 80522 888-900-8283 x223 970-484-8283 x223 naiprograms@aol.com	Was impressed with the format and content of the plan; Suggested simplifying the mission statement for ease of use (currently restatement of the goals):  <i>To encourage stewardship of ocean, coastal, and Great Lakes resources and increase informed decision-making for the nation.</i>	8/5	Thanks	None
8	7/17	Byrne, John, PhD President Emeritus Oregon State University Autzen House 811 Southwest Jefferson Corvallis, Oregon 97333-4506 john.byrne@oregonstate.edu	Via correspondence with Louisa; Concurred with Frank Kudrna that this should reflect the EOE framework; Especially supported idea of a greater emphasis in partnership institutions			Louisa?
13	7/24	Davis, Dorie, Director Duval County Public Schools Jacksonville, Florida External Funding 904-390-2132 David13@duvalschools.org	Interested in having a grant focused on workforce development of inter-global commercial waterway logistics management	7/29	Thanks; suggested he speak with EPP if he has a pilot program in mind	None

14	7/24	Donahue, Pat Teacher DonahueP@verizon.net	Expressed concern over “facilitating change” outcome; Suggests running pilot programs and sharing results; work with classrooms not top down; Plan does not address development of more science teachers just training of current teachers; does not feel workforce strategies address real causes of shortages in STEM; numerous editorial suggestions	7/25	Thanks; made party aware of shift in conceptual model from multiple oceans to a single ocean with many features.	None
25	8/11	Fortner, Rosanne W., Director COSEE Great Lakes Ohio Sea Grant Education Program <a href="http://coseegreatlakes.net">http://coseegreatlakes.net</a> Phone and fax: 910-278-6754 fortner.2@osu.edu	Feels strongly that “Education” be the focus of this plan and leave extension and outreach to other planning efforts; suggests using Dr. Joe Heimlich’s definitions for formal, nonformal, informal and self-directed learning providing examples of each; reference MEERA in discussion of evaluation planning; concerned of potential stigma with using “environmental” prefers “Earth Science literacy”; other grammatical edits	8/12	Thanks	None
27	8/4	Friedman, Alan Friedman, Alan J., Ph.D. Consultant Museum Development and Science Communication 29 West 10th Street New York, New York 10011 USA T +1 917 882-6671 F +1 212 673-2279 E AlanFriedman@verizon.net	Agrees with other EOEWG members that there should be one strategic plan covering all EOE to: increase impact of NOAA's investment to achieve mission and to improve efficiency by minimizing un-coordinated messaging and duplication of effort; do not separate social and economic decision making both are highly inter-related; "environmental literacy" seems too broad, NOAA focus is on Oceanic and Atmospheric literacy, reword; need to provide examples and reconsider definitions of education particularly "informal" and "free Choice"; too much emphasis on FORMAL education; incorporate new NRC study and NSF Framework into evaluation discussion; refine usage of the term "engagement"		Personal correspondence with Louisa Koch	None
4	7/17	Havens, Karl E., Ph.D. Professor and Director Florida Sea Grant College Program University of Florida Website: <a href="http://www.flseagrant.org">www.flseagrant.org</a> Telephone: (352) 392-5870 E-mail: khavens@ufl.edu	Did not feel Sea Grant and NERRS were well represented in plan. Would like to see more specific discussion of the history and strengths of these programs in support of Plan goals.	7/17	Thanked; made aware of Implementation Plan where more specific objectives will be set; Pointed out mandates section.	None

17	8/1	Haynes, Susan E. Education Program Manager NOAA Office of Ocean Exploration and Research www.oceanexplorer.noaa.gov susan.haynes@noaa.gov	Numerous edits; Which “innovative technologies” are getting most use?; Will Office of Education be disseminating research findings from Goal 1 Outcome 1? What about Non-Science Attentive Public? Rerword Title for Outcome 1.6 - Internally Coordinated Education Efforts or Intra-Agency Efforts; suggests strengthening language in 1.6 to increase cross education/communication of line offices; How much will be budgeted for evaluating success of plan? How will these funds be distributed?	8/4	Thanks	None
26	8/12	Hildreth, Carol AMS Education Resource Agent 711 Broadway Mechanicville, NY 12118 carolhldr@aol.com	Provided several editorial comments and added the <i>AMS Datastream Project</i> as an example under Outcome 1.5 Interagency Partnerships	8/12	Thanks	None
7	7/17	Joiner, Jennifer DeKalb County School System Atlanta, GA <a href="mailto:o-captain@mindspring.com">o-captain@mindspring.com</a>	More teacher involvement in curriculum development; How does teacher know if Literacy Stds not based on “Political Agenda”; Build an elementary/middle school component into workforce development; more “inland” opportunities for ocean science	7/23	Thanks; Also provided comment and resources on NOAA resources and opportunities for several points; reply was bounced	None
6	7/17	Kudrna, Frank, Ph.D., P.E., Supervising Engineer of Flood Control, Metropolitan Sanitary District of Greater Chicago, 100 East Erie Street, Chicago, Illinois 60611 <a href="mailto:fkudrna@kudrna.com">&lt;fkudrna@kudrna.com&gt;</a>	1) Concerned plan did not reflect SAB report references to EOE; 2) Felt plan should have a greater identification and use of NOAA's University partners.			Requires response from Louisa
11	7/21	McCaffrey, Mark S. Science Communications CIRES Education & Outreach University of Colorado- Boulder Campus Box 449 Boulder, CO 80309 303.735.3155	Add “resiliency” to all references of sustainability; create a more urgent tone to the document, sounds like business as usual; expand literacy education to more processes of science; add consumer best practices to educational content on climate and ocean management	7/23	Thanks; recognized his distinct knowledge of NOAA programs and policy	None (individual also called while I was out but resolved his question and sent comments before I called back)

21	8/5	Merriman, Tim, Ph.D. Executive Director NAI, P.O. Box 2246, Fort Collins, CO 80522 Naixec@aol.com http://www.interpnet.com 888-900-8283 National Office	Personal email to Jeannine Montgomery; presented idea that learning does not lead to loving natural resources noting the difference between traditional education and interpretation which focuses on building emotional connections to evoke stewardship behavior; feels outcomes are written as outputs need higher level impact statements; encourage better integration of interpretation literature and planning models including “visitor experience design” and “experience economy”		Jeannine thanked Tim in personal correspondence	None
15	7/28	Morris-Zarneke, Kim Manager of Education Programs Georgia Aquarium 225 Baker Street Atlanta, GA 30313 ph: 404-581-4192 kzarneke@georgiaaquarium.org	Attended NMEA session; please clarify use of inter vs intra agency particularly when referencing NGO collaboration; Outcome 1.5 needs clarification, is this intra or interagency?; Would like to see more specific reference to local partners included in plan in regards to environmental literacy goal fulfillment.	2/29	Thanks	None
22	8/8	Nielsen-Gammon, John W. Professor and Texas State Climatologist Dept. of Atmospheric Sciences, Texas A&M University (O&M Rm 1012A) 3150 TAMUS, College Station, TX 77843-3150 Ph 979-862-2248 n-g@tamu.edu	Feels the NWS is in a workforce development crisis and the plan does not address; Notes a lack of research funding in this area does not enable faculty and institutions to attract graduate students thus fewer graduates have the skills to address current weather forecasting issues; ultimately limiting research funds in meteorology will deter PhD candidates from pursuing teaching positions in this discipline as they will struggle to fund research which support tenure designation; Feels the answer is building partnerships to secure externally-funded competitive research; “With the magnitude of this problem, the lack of any mention of it in the draft education plan is stunning.”	8/8	Thanks; Noted “disciplines critical to NOAA’s mission” described in the Goal 2 intro includes meteorology. Encourage contact with the EPP Office to discuss graduate student scholarship and research opportunities	None
19	8/3	Reutter, Jeffrey M., PhD, Director Ohio Sea Grant College Program, F.T. Stone Laboratory, The Ohio State University Area 100 Research Center, 1314 Kinnear Rd., Columbus, Ohio 43212	Agrees with comments of Jeff, John, and Frank regarding missed opportunity to create an Engagement Plan; Felt Outcome 1.6 was not sufficient to meet the vision of the EOE Report; Increase emphasis on “building on existing NOAA assets”			
1	7/11	Rom, Lisa National Science Foundation	Section on Partnerships weak in describing Federal partnerships as defined under ORRAP		Personal message to Marlene	?
2	7/14	Sachau, B 15 Elm Street, Florham Park, NJ 07932 bk1492@aol.com	Felt it was inappropriate that NOAA would create a new strategic plan when it cannot adequately complete its standing mission			None

18	8/3	Sarmiento, Jorge L., Prof. AOS Program, Princeton U. Sayre Hall, Forrestal Campus P.O. Box CN710 Princeton, NJ 08544-0710 jls@Princeton.EDU	Reviewed with his graduate students; Felt Goal 2 was weak in referencing graduate student opportunities and graduate education.	8/4	Thanks; stated that graduate education is important to NOAA and was intended to be referenced as a strength in the plan and would review.	Sent comments to Workforce Development Group
5	7/17	Smith, Adam B. NOAA's National Climatic Data Center, Physical Scientist Tel: (828) 271-4183 Fax: (828) 271-4876 Adam.Smith@noaa.gov	One NOAA initiative that is not referenced in NOAA's Education Strategic Plan - yet seems appropriate to include - is the newly developed "NOAA Economics" website: <a href="http://www.economics.noaa.gov">www.economics.noaa.gov</a>	7/17	Thanks, suggested using as an example in Goal 1 Outcomes 3 & 4 (p 11 line 20-23 and p 12) and the discussions in the intro section of Goal 1 (p 7&8).	None
10	7/21	Stephan, Jeffrey R. United Fishermen's Marketing Association, Inc. PO Box 2917, Kodiak, AK 99615 907-486-4568 <a href="mailto:jstephan@ptialaska.net">jstephan@ptialaska.net</a>	Commented on a missed opportunity to combine Extension/Outreach/Extension; notes lack of emphasis on university partners with K-12 initiatives			Sent directly to Louisa. Do we respond as well?
12	7/22	Tramontana, Eileen Education and Volunteer Manager St. Johns River Water Management District 4049 Reid Street Palatka, FL 32177 Ofc phone: 386-329-4572	Specifically mention Gulf of Mexico; More emphasis on state, regional agencies and organizations; add National (and state) Envirothon programs to examples, NOAA information is generally missing; Additional collaborations need to be made with professional education organizations; national education advisory council (made up of non-federal employees) and formal and non-formal environmental expert to assist with implementation plan	7/23	Thank you	None
24	8/11	Ucko, David A., Ph.D. Deputy Division Director Research on Learning in Formal & Informal Settings Education & Human Resources National Science Foundation 4201 Wilson Boulevard, #855 Arlington, VA 22230 703.292.5126 DUcko@nsf.gov	Comments on the definitions of "informal education" and "nonformal education" ; the definition used in the plan is considered "nonformal" in many other settings and in an upcoming report by National Academies; suggests changing to match common practice.		In personal message to Louisa to which she responded	None