



National Oceanic and Atmospheric Administration
NOAA Education

2008 Profile of NOAA Education

*A summary of NOAA Education
programs and resources*

Introduction: Profile of the NOAA Education Council Member Programs

NOAA Education implements the mandates laid out in the America COMPETES Act (P.L. 110-69) and other federal statutes to advance environmental literacy and stewardship and promote a diverse workforce in ocean, coastal, Great Lakes, weather, and climate sciences. NOAA Education fulfills these mandates through educational activities offered by individuals and entities throughout NOAA and coordinates such efforts through alignment with the *NOAA Education Strategic Plan*. The core programs that oversee this work are represented by the voting members of the NOAA Education Council and are termed Administrative Units. This document provides a brief organizational profile of each Administrative Unit and the primary focus of its education work.

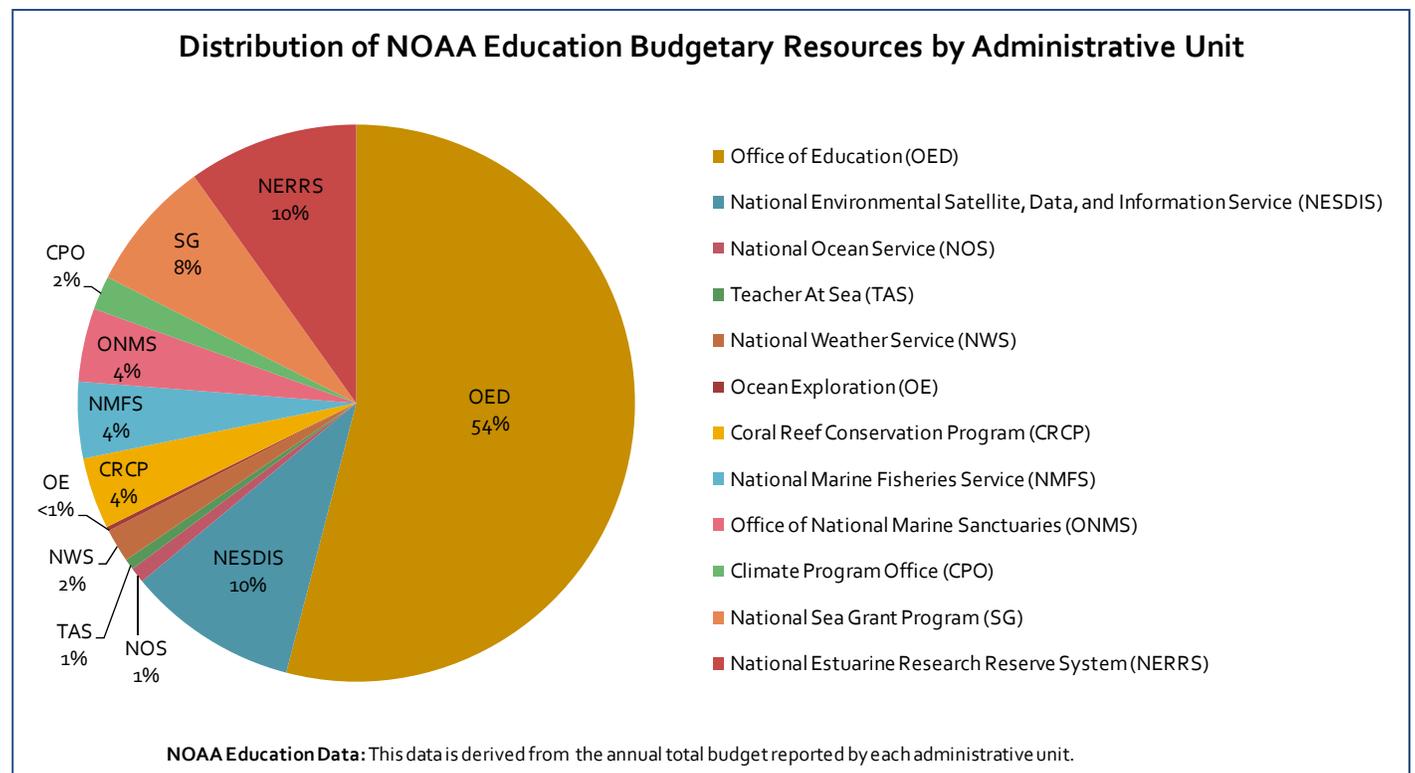
A. Distribution of NOAA Education Resources

Resources Allocated for Education by Administrative Unit

Together, the programs which comprise the NOAA Education Council represent approximately 1.7% (\$64.3 million) of the 2008 NOAA operating budget. An estimate of 2008 education funds, distributed by Administrative Unit, is provided in the chart below. The figures used to generate the chart include funding for grants, programming, personnel, and contracts.

Disclaimer: The budget numbers used in these calculations were collected by the NOAA Education Council in an attempt to best estimate total 2008 NOAA Education resources.

Figure 1: NOAA Education Resources by Administrative Unit

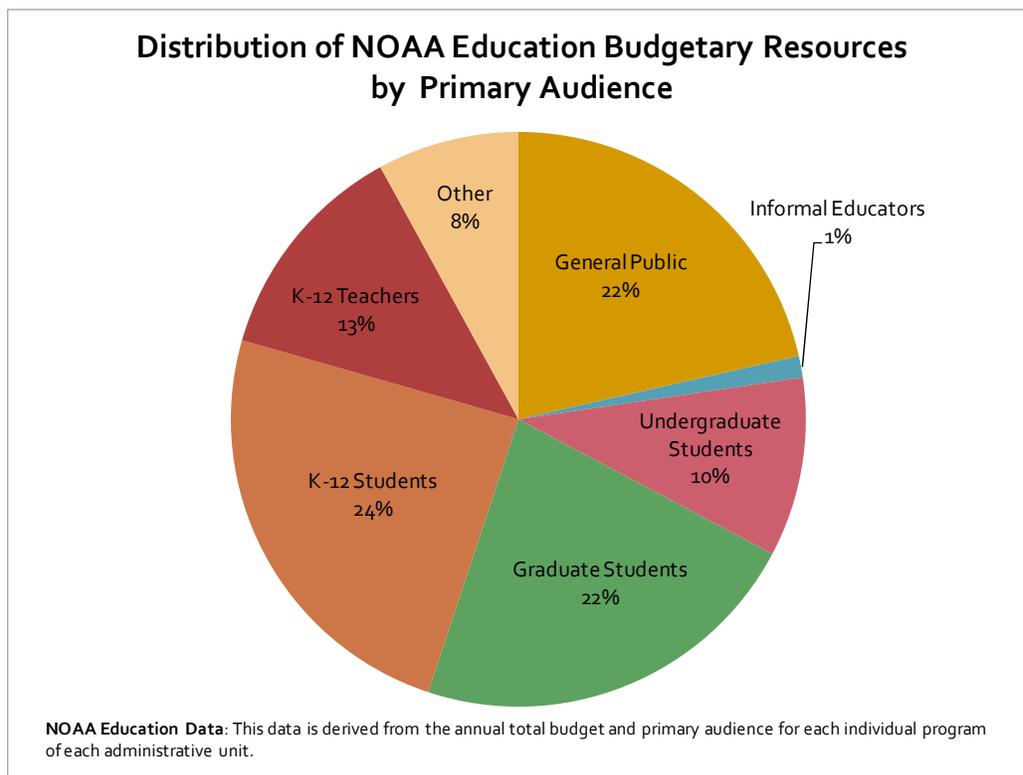


Primary Audiences for NOAA Education

The chart below provides a profile of the primary audiences on which NOAA Education focuses its educational programs and resources. These audiences are the “primary” focus, although NOAA Education programs do impact additional audiences in the United States. The same primary audiences are used in Section B, which shows individual Administrative Unit profiles. Audiences have been defined in the following manner:

- Primary Audience – Audience that is directly impacted by the program. This group of people participates in and learns directly from the programmatic projects and activities. The primary audience is equivalent to the target audience (the specific segment of the population that is intended to receive exposure to the program).
- K-12 Students – Students enrolled in kindergarten through twelfth grades.
- K-12 Teachers – Teachers employed in a formal school setting in kindergarten through twelfth grades.
- Undergraduate Students – Students enrolled in a university or community college who are working toward an associate or undergraduate degree.
- Graduate Students – Students enrolled in a university at the graduate level.
- Informal Educators – Educators who work with students or the public in an informal setting, such as a museum, science center, or an aquarium.
- General Public – Any participants who are not affiliated with another defined audience.

Figure 2: NOAA Education Resources by Primary Audience



B. NOAA Education Profiles by Administrative Unit

The current capabilities of each NOAA Education program form the foundation for implementing the *Education Strategic Plan* and the strategic directions outlined in the subsequent *Implementation Plan*. This section profiles each Administrative Unit and illustrates the wide variety in scope, structure, budgets, staffing, content focus, and maturity of the programs offered. Many programs have similar target audiences and program delivery methods, which emphasizes the need for and benefit of coordinated strategic planning efforts.

Climate Program Office (CPO)

Education Budget for FY08 (% of Total CPO Budget): \$1.3M (1%)

Enabling Legislation: America COMPETES Act, *Omnibus Public Lands Management Act*

Line Office: Office of Oceanic and Atmospheric Research

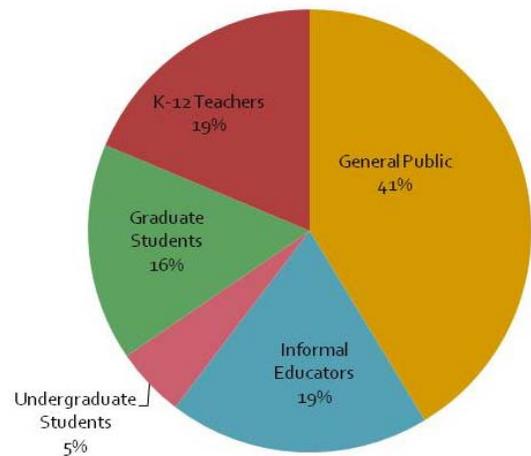
Staffing: Director, Coordinator, 2 Science Writers, Climate Visualization Project Manager, Education Specialist

Overview: NOAA's Climate Communication and Education Program seeks to improve public climate science literacy and to raise public awareness and understanding of, and engagement with, NOAA's climate science and services programs. Climate Education produces and distributes a range of products, conducts programs, and collaborates in partnerships designed to help NOAA fulfill its climate goal.

<http://www.climate.noaa.gov/education/> and <http://www.climate.gov/#Education>

Education Themes: Climate Literacy; Educator Professional Development; Climate Change; Data Visualization; Outreach and Engagement; Informal Science Education; Citizen Science; Public Communication

Major Programs: Climate Literacy Principles; Climate Visualizations; Communicating Climate Change (ASTC); Climate Portal; Climate Watch magazine; Community Conversations on Climate; Regional Climate Literacy and Energy Awareness



Coral Reef Conservation Program (CRCP)

Education Budget for FY08 (% of Total CRCP Budget): \$2.66M (10%)

Enabling Legislation: Coral Reef Conservation Act of 2000, America COMPETES Act

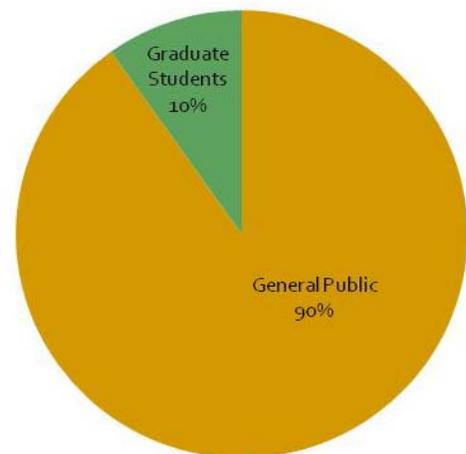
Line Office: NOAA-Wide Matrix Program (Headquarters under National Ocean Service)

Staffing: National Coordinator, Fellowship Coordinator (part-time)

Overview: The Coral Reef Conservation Program works closely with states and U.S. territories to address climate change, adverse impacts of fishing, and land-based sources of pollution that damage reef ecosystems. The Program supports local education efforts, teacher training at national conferences, and the development of classroom-ready educational products. <http://coralreef.noaa.gov/education/>

Education Themes: Coral Reef Conservation; Effects of Climate Change on Corals; Effects of Fishing on Coral Reef Ecosystems; Influence of Land-based Sources of Pollution on Coral Reefs

Major Programs: Coral Reef Management Fellowship; National Science Teacher Association Partnership; CRCP General Grants Program



National Estuarine Research Reserve System (NERRS)

Education Budget for FY08 (% of Total NERRS Budget): \$6.34M (37%)

Enabling Legislation: Coastal Zone Management Act, America COMPETES Act

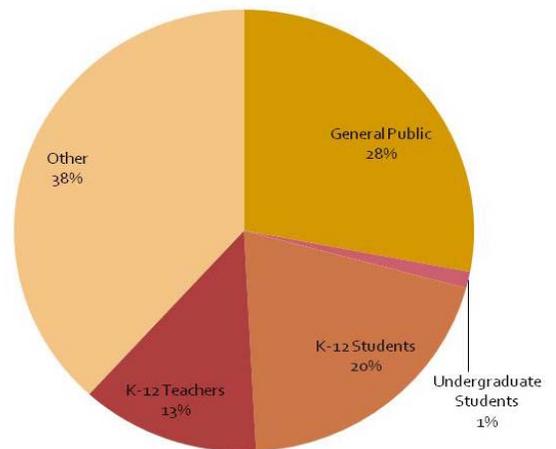
Line Office: National Ocean Service

Staffing: National Education Coordinator, National Coastal Program Coordinator, 27 Education Coordinators*, 79 Education Specialists*, 25 Coastal Program Coordinators* (*State Positions through Cooperative Agreements)

Overview: The National Estuarine Research Reserve System is a network of protected areas established for long-term research, education, and stewardship. This partnership program between NOAA and the coastal states offers educational opportunities for students, teachers, and the public. <http://nerrs.noaa.gov/Education.aspx>

Education Themes: Climate Change & Sea Level Rise; Estuary Ecology; Effects of Human Activities on Estuary Health; Fostering Estuary Stewardship; Watersheds & Land Use/Land Cover Change Effects on Estuaries

Major Programs: Educator Professional Development Program; K-16 Student Education Programs; Informal Education Program; Community Education Program; Visitor Center Exhibits and Educational Facilities; Coastal Training Program



National Environmental Satellite, Data, and Information Service (NESDIS)

Education Budget for FY08 (% of Total NESDIS Budget): \$6.36M (0.001%)

Enabling Legislation: America COMPETES Act

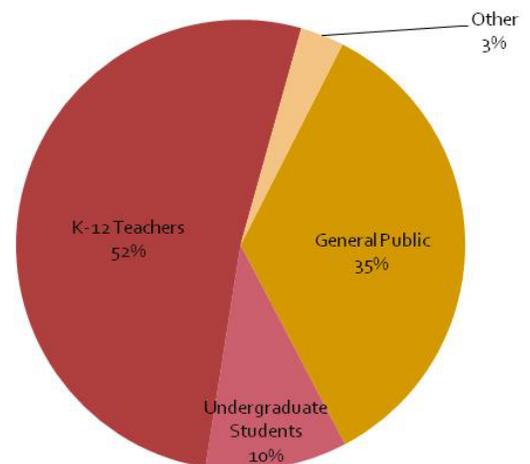
Line Office: National Satellite and Information Service

Staffing: Chief of Staff, Deputy Chief of Staff, Communication Team Lead, Coordinator, Line Office Program Staff

Overview: NOAA Satellites and Information Service partners and collaborates with science-based agencies and academia to provide K-12 teachers, students, educational professionals, and the public with satellite information and educational tools. NESDIS Education conducts teacher workshops, provides classroom-ready materials, and develops hands-on activities and data visualizations for teachers and students. <http://www.nesdis.noaa.gov>

Education Themes: Understanding Earth Observation Data including Climate and Coral Reef; Data Visualization; STEM Careers; K-12 Education; Informal Science Education

Major Programs: Informal Education Outreach Program; Formal Education Outreach Program; K-12 Student Education Programs; Educator Professional Development Program; NESDIS Internship Program



National Marine Fisheries Service (NMFS)

Education Budget for FY08 (% of Total NMFS Budget): \$2.9M (0.35%)

Enabling Legislation: Magnuson-Stevens Fishery Conservation and Management Act, America Competes Act

Line Office: National Marine Fisheries Service

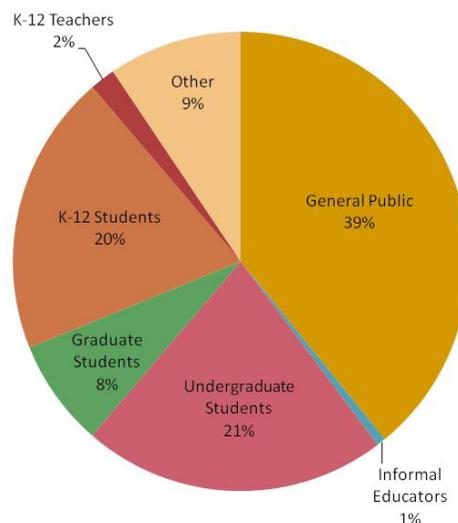
Staffing: National Director, 20 Fisheries Education Council Members, 3 Science Center Educators (1 full-time and 2 part-time)

Overview: The National Marine Fisheries Service (NMFS) provides student and educator research experiences and materials that support the NMFS mission, which is to promote stewardship of living marine resources through science-based conservation and management and the promotion of healthy ecosystems.

<http://www.nmfs.noaa.gov>

Education Themes: Ocean Literacy; Oceans and Human Health; Climate; Protecting Marine Species (Marine Mammals, Sea Turtles, and Fish); Understanding Human Impacts on Oceans; Endangered Species and Marine Mammal Protection Acts; Habitat Conservation; Understanding Data; K-20 Education

Major Programs: K-12 Student Education; Informal Education Programs (including Partnerships with Science Centers and Aquariums); Educator Professional Development; Internship programs for Undergraduate and Graduate Students



National Ocean Service (NOS)

Education Budget for FY08 (% of Total NOS Budget): \$0.577M (1.2%)

Enabling Legislation: America COMPETES Act

Line Office: National Ocean Service

Staffing: 2 Coordinators, Specialist and Staff Member

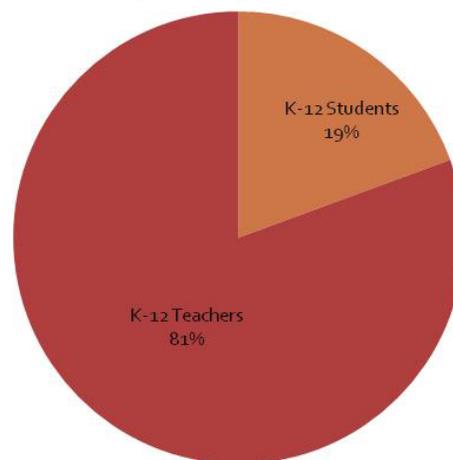
Overview: National Ocean Service Education serves educators and students through websites and programs that promote environmental literacy using ocean, coastal, and climate science. Tools and professional development for teachers and environmental games, mysteries, and resources for students are found on two comprehensive websites:

<http://games.noaa.gov> and

<http://oceanservice.noaa.gov/education>

Education Themes: Ocean and Coastal Literacy; Effects of Climate Change on Ocean and Coastal Ecosystems; Tide and Current Monitoring; Nautical Charts; Marine Spatial Planning; Global Positioning; Marine Debris; Sustainable Coastal Communities

Major Programs: Chesapeake Bay Education Environmental Literacy and BWET; Educational Partnerships; NOS Education Website; NOAA Games website; NOAA WaterWays; Climate Change Education



National Sea Grant Program (SG)

Education Budget for FY08 (% of Total SG Budget): \$4.9M (8.59%)

Enabling Legislation: National Sea Grant College Program Act,
America COMPETES Act

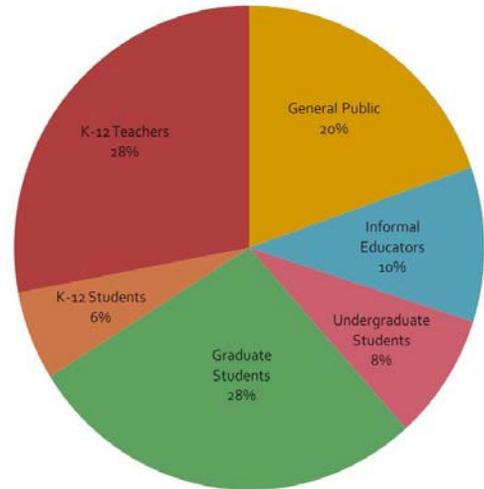
Line Office: Office of Oceanic and Atmospheric Research

Staffing: Director, Deputy Director, 32 State Directors, Part-time
or Full-time Sea Grant Educators

Overview: An established network of Sea Grant educators,
located at universities across the Nation, is committed to
NOAA's goal of advancing environmental stewardship and
educating future environmental professionals and
leaders. Sea Grant educators tailor both informal and K-12
marine and aquatic education efforts to meet their
regional needs. <http://www.seagrants.noaa.gov/>

Education Themes: Healthy Coastal Ecosystems; Sustainable
Coastal Development; Safe and Sustainable Seafood
Supply; Hazard Resilience in Coastal Communities; Cross-Cutting Themes: Ocean Literacy, Climate Change,
Ocean Observing Systems

Major Programs: Professional Development for Precollege Teachers; National Ocean Sciences Bowl; Ocean and Great
Lakes Literacy - Precollege Students; Ocean and Great Lakes Literacy - General Public; Curriculum
Development; Higher Education Student Development: National Sea Grant College Program Dean John A.
Knauss Marine Policy



National Weather Service (NWS)

Education Budget for FY08 (% of Total NWS Budget): \$1.245M (0.13%)

Enabling Legislation: America COMPETES Act

Line Office: National Weather Service

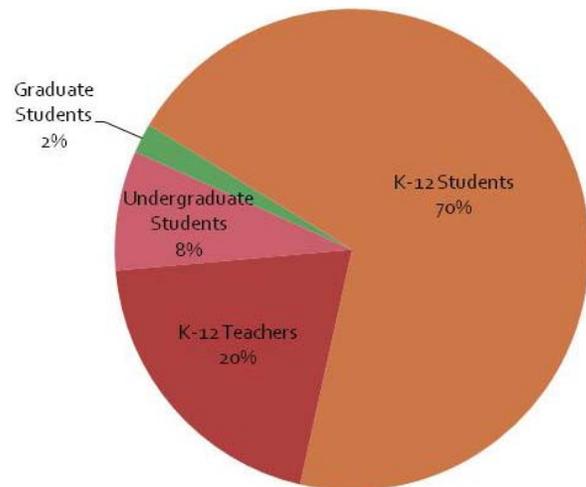
Staffing: Outreach Program Manager, 133 Warning
Coordination Meteorologists (WCM), 13 Service
Coordination Hydrologists (SCH)

Overview: The National Weather Service (NWS) staff
conducts almost 2,500 school visits each year,
providing weather, climate, and water information to
teachers and students, grades K-12. The NWS has an
on-going partnership with the American
Meteorological Society to train science teachers in
weather forecasting, hydrology, climate, and NWS
operations. NWS also provides free NOAA Weather
Radios to every public school in the country.

<http://www.weather.gov/education.php>

Education Themes: Severe Weather Preparedness; Resilient Communities; Finding Weather Information

Major Programs: Media/Publications; Conferences; Weather Radio; American Meteorological Society (AMS)
Fellowship; AMS Teacher Professional Development Program



Office of Ocean Exploration (OE)

Education Budget for FY08 (% of Total OE Budget): \$0.183M (0.01%)

Enabling Legislation: America COMPETES Act

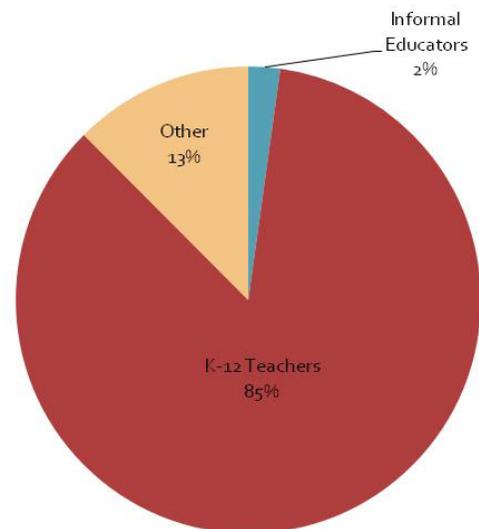
Line Office: Office of Oceanic and Atmospheric Research

Staffing: Education Director, Education Program Manager

Overview: The NOAA Office of Ocean Exploration and Research seeks to engage audiences of all ages to enhance America's environmental literacy through the excitement of ocean exploration and discovery. The program strives to enhance ocean science literacy through high-quality, effective collaborations between ocean explorers and America's K-16 teachers. <http://oceanexplorer.noaa.gov/edu/welcome.html>

Education Themes: Interdisciplinary Exploration of the Ocean; Use of Advanced Underwater Technology for Ocean Exploration; Connecting Explorers Aboard the NOAA Ship *Okeanos Explorer* in Near-Real Time with Teachers and Students; Role of Ocean Exploration in Understanding Climate Change, Ocean Health, Human Health, and Sources of Energy.

Major Programs: Ocean Exploration Informal Alliance Partnerships with Aquariums and Museums; On-site "Learning Ocean Science through Ocean Exploration" Professional Development for Educators; "Why Do We Explore?" Online Professional Development for Educators; Ocean Exploration Expedition-focused Educational Materials Development; Ocean Explorer Website



Office of Education (OEd)

Education Budget for FY08 (% of Total OEd Budget): \$34.7M (100%)

Enabling Legislation: America COMPETES Act

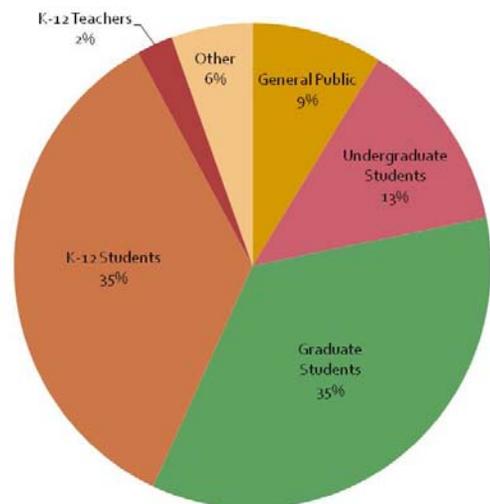
Line Office: NOAA Staff Office under NOAA Headquarters

Staffing: Director, Deputy Director, 2 Associate Directors, 16 Education/Grants Specialists, Program Specialists, and Administrative Staff

Overview: The Office of Education, in conjunction with the NOAA Education Council, coordinates education activities across NOAA and oversees the implementation of the NOAA's Education Strategic Plan and Policy. These efforts ensure that NOAA's education programs and activities are based on NOAA science and support the agency's priority of environmental literacy. OEd also works with external partners to promote environmental literacy efforts.

Education Themes: Ocean Literacy; Climate Literacy; Data Visualization; K-12 Education; Postsecondary Education; Informal Science Education; Citizen Science

Major Programs: Educational Partnership Program; Hollings Scholarship Program; Nancy Foster Scholarship Program; Environmental Literacy Grants Program; Bay-Watershed Education & Training Program



Office of National Marine Sanctuaries (ONMS)

Education Budget for FY08 (% of Total ONMS Budget): \$2.74M (0.01%)

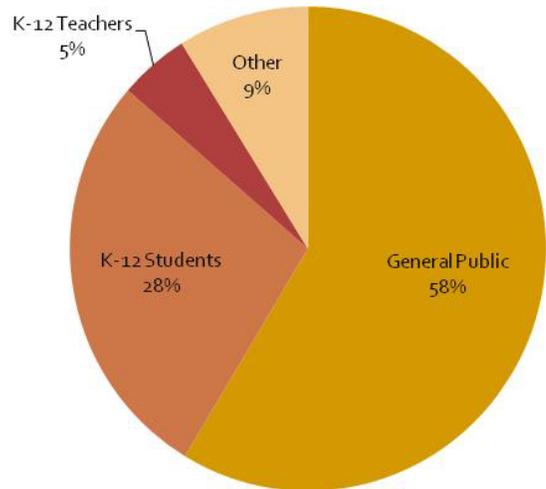
Enabling Legislation: National Marine Sanctuaries Act, America COMPETES Act

Line Office: National Ocean Service

Staffing: Director, 14 Sanctuary Education Coordinators, Program Staff

Overview: Since 1972, the Office of National Marine Sanctuaries (ONMS) has been federally mandated to promote environmental education through thirteen national marine sanctuaries and one marine national monument. Through hands-on activities, workshops, classroom curricula, and innovative technology, ONMS reaches over 33 million people a year with messages about the ocean and its resources.

<http://sanctuaries.noaa.gov/education>



Education Themes: Ocean Literacy; Stewardship, Cultural Heritage; Maritime History; Marine Debris; Water Quality; Human Health; Climate and Ocean Environments; Sustainability; Marine Mammals; Fisheries

Major Programs: Visitor Center Exhibits; LiMPETS Field Data Collection; Oceans for Life; Citizen Monitoring Programs; MERITO multicultural education program; Team OCEAN

Teacher At Sea Program (TAS)

Education Budget for FY08 (% of Total OMAO Budget): \$0.4M (0.22%)

Enabling Legislation: America COMPETES Act

Line Office: Office of Marine and Aviation Operations

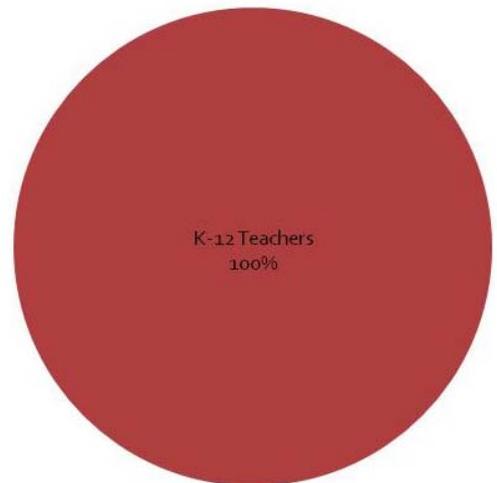
Staffing: Director

Overview: Teacher at Sea provides a unique environment for learning and teaching by sending kindergarten through college-level teachers to sea aboard NOAA research and survey ships to work under the tutelage of scientists and crew. The valuable skills and knowledge that teachers acquire are then brought to the classroom.

<http://teacheratsea.noaa.gov/>

Education Themes: Ocean Literacy Principles; Climate Literacy Principles; STEM Careers

Major Programs: NOAA Teacher at Sea



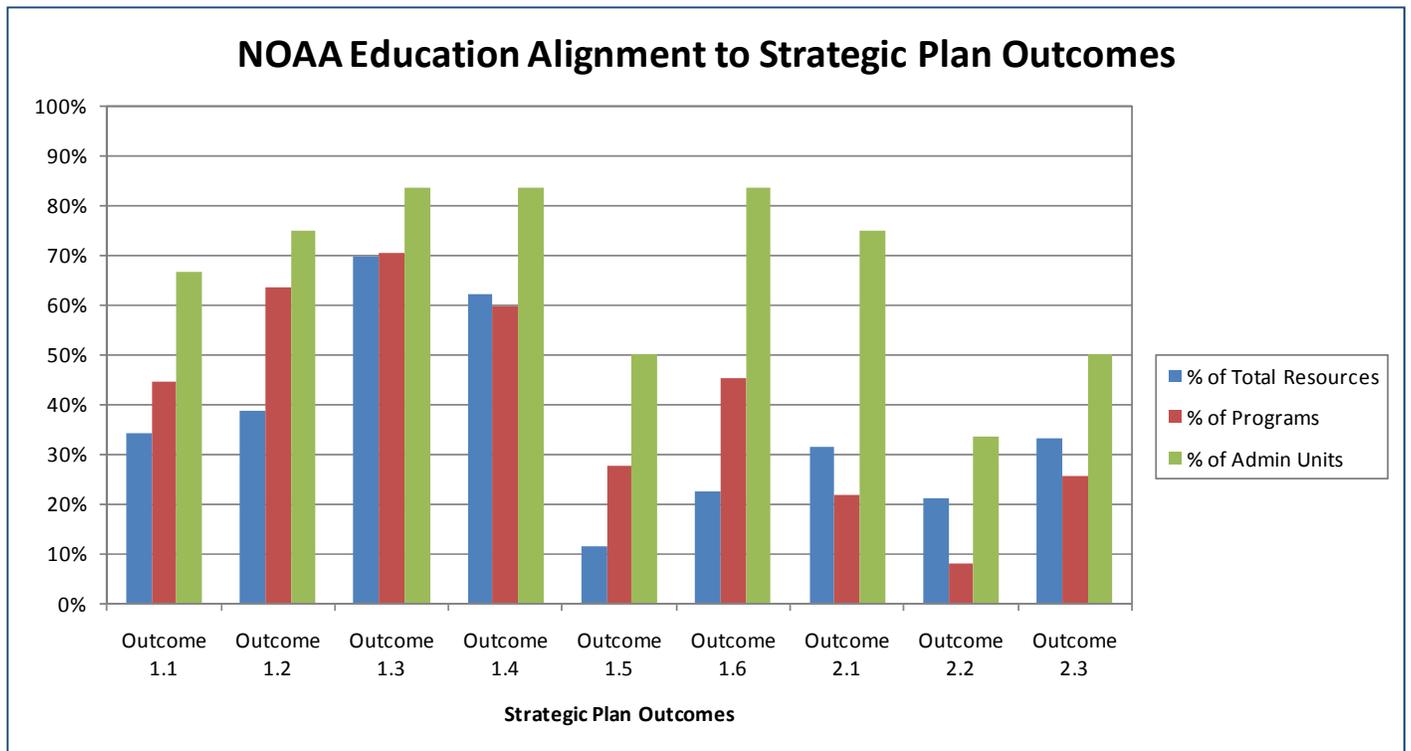
Note: As of FY09, Teacher at Sea will be located in and managed by The National Marine Fisheries Service (NMFS).

C. Education Strategic Plan Alignment: Self-Study Results

In May 2009, the NOAA Education Council undertook a self-study to determine how current efforts by each Administrative Unit, and their corresponding individual programs, align with the goals, outcomes, and strategies of the *NOAA Education Strategic Plan*. This study collected data from both national and regional NOAA offices to create a comprehensive inventory of educational programming across the agency. The following graph summarizes the results of this inventory and displays the approximate level of support for each of the outcomes in the Strategic Plan. Three variables were analyzed in this assessment:

- **% of Total Resources** – This category sums the budgets for all individual programs (programs run by each Administrative Unit) that moderately to strongly support a particular outcome. This amount was totaled and reported as a percentage of the total NOAA Education budget.
- **% of Programs** – This category includes the number of individual programs that moderately to strongly support an outcome. The number reported is a percentage of the total individual programs.
- **% of Administrative Units** – Each Administrative Unit in the NOAA Education Council that had at least one program that moderately or strongly supported an outcome was counted in this category. The number reported is a percentage of the 12 Administrative Units in the Council.

Figure 3: Strategic Plan Outcome Alignment 2008 – Moderate to Strong Support for Outcome Strategies



The graph indicates that the strongest support and the greatest participation are associated with Outcome 1.3 (inquiry based learning) and Outcome 1.4 (lifelong learners). These outcomes fall under the environmental literacy goal (Goal 1) and focus on formal and informal education. Also showing a high level of participation, but lower levels of resource allocation, are Outcome 1.6 (interagency collaboration) and Outcome 2.1 (making students and teachers aware of student opportunities for workforce development). Outcome 1.5 (intra-agency collaboration) and Outcome 2.2 (creation and support of student opportunities) exhibited the lowest levels of support. All of the outcomes under the workforce development goal (Goal 2) have high resource allocations relative to the number of programs and administrative units supporting those outcomes. This relationship indicates that a small number of Administrative Units are running a few targeted and well-resourced programs to support these outcomes.