



NOAA
FISHERIES

Teacher at Sea

NOAA's Teacher at Sea Program

2012 Year in Review

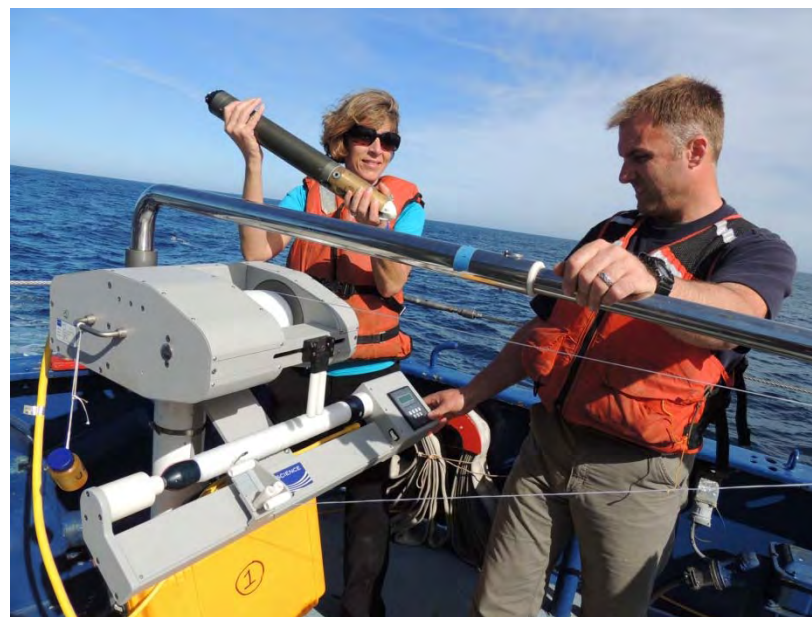
December 2012



NOAA's Teacher at Sea Program 2012 Year in Review

Overview

- 2012 NOAA Teacher at Sea Season Snapshot
- Return on Investment
- Opportunities & Challenges
- Background Material



"I loved being with new people, learning from them, getting to know the lifestyle of sailors, being an insider on how my country is involved in the global science initiatives with climate research, and gaining a whole different context of living and learning." – Sue Oltman, 2012



The 2012 NOAA Teacher at Sea Season



“What a privilege it has been to be a member of this team of researchers.
I am honored to learn from them.” – Janet Nelson, 2012

2012 Snapshot



By the Numbers

- Teachers sent to sea: 29
- Days at Sea: 380
- Research Hours: 4500
- States represented: 23
- Teachers placed in labs & field: 11
- Active Alumni: 300+
- Outreach events: 21
- Science blogs: 340
- Graduate Credits Awarded: 21

"There was tremendous support before during and after the cruise. As an educator I felt very appreciated by NOAA Corps and scientists." – Debbie Campbell, 2012



2012 Return on Investment

Program Operations

- 220 teachers applied to the program
- Applications peer-reviewed by 60-person selection committee
- 25 selected and 9 alternates
- 70+ NOAA scientists offered berths to teachers
- 29 teachers sailed on NOAA research cruises
- Teachers represented 23 states and Bermuda
- Worked a total of 380 days at sea (4500 hours) side-by-side with NOAA scientists



"The ability to be such an integral part of a scientific research team was very important. It made me feel like I could more easily bring the feel of doing "real" research into the classroom." – Lesley Urasky, 2012



2012 Return on Investment

Program Operations

- 100% of the 2012 teachers who sailed completed survey and stated:
 - They benefited from participating
 - They would recommend the program
 - They were very satisfied with their research experience
- Updated and expanded online pre-cruise training system
 - Teachers extensively trained for at-sea experience
 - 8 - 10 hour course



I have learned how scientists operate in the field and can now create that bridge between scientists on the ship and my students in the classroom. I have also gained first-hand experience in doing fieldwork, which I will now share with my students and can encourage them to look into science-related careers.

– Andrea Schmuttermair, 2012

2012 Return on Investment



Web & Social Media

- Launched newly designed site in May 2012 that includes a searchable interface for over 600 blog posts and 5300 photos
- Conducted 24+ hours of training regarding blogging
- ~15,000 visitors each month to TAS blog
- Managed content of nearly 700 science blogs
- Managed ~5300 free for public photos
- 1,000+ Facebook “Likes” and ~5,000 reached each week
- 4,400+ Twitter followers

The screenshot shows the NOAA Teacher at Sea website homepage. At the top, there is a navigation bar with links for Home, FAQs, How to Apply, and Contact Us. Below this is a main banner for NOAA Education with the URL www.education.noaa.gov. The main content area features a section for 'Teacher at Sea Alumni News...' with a list of posts and a 'Read More' link. To the right, there are 'QUICK LINKS FOR TEACHERS' and 'QUICK LINKS FOR ALUMNI'. At the bottom, there are three columns: 'CURRENT SEASON' featuring a photo of Carmen Andrews, 'ALUMNI SPOTLIGHT' featuring Jillian Worssam, and 'PHOTO OF THE WEEK' featuring a photo of a sailboat. A 'FROM THE TAS BLOG' section is also visible on the right side.

2012 Return on Investment



Web & Social Media

- Developed creative social media and web campaigns to lead people to blogs and photos
 - “Vote Now” campaign taught public about pollock and red snapper
 - Photo of the Week – provides science info about NOAA research at sea
 - Free to Public
 - High Resolution Versions Available
 - Example: Photo of the Week - 10/8/2012

“American lobsters have a long life span. Scientists believe some American lobsters may live to be 100 years old and can grow up to 44 pounds. This makes lobsters the heaviest marine crustaceans in the world! The lobster pictured here weighed in at 16lbs and then was returned to the ocean.” - Kaitlin Baird, TAS.

Photo By: Kaitlin Baird, TAS





2012 Return on Investment



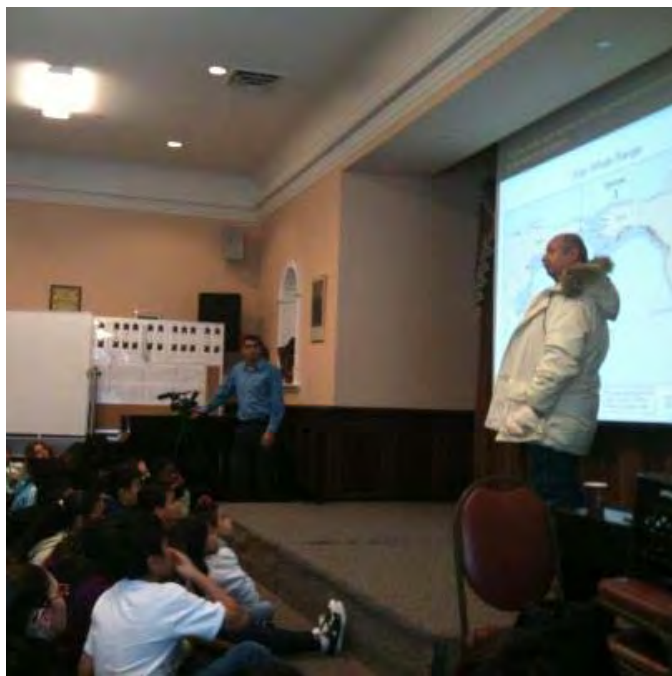
Teacher at Sea Alumni

- 21 TAS alumni presented and worked at education and science conferences (with approximately ~574,000 attendees) on behalf of NOAA
- 23 media posts (articles, TV, radio, web, etc.)
- 12 Hill acknowledgements (via letters)
- 2 alumni workshops in New England
- Received 80+ lesson plans, 50+ presentations, 500+ photos, and numerous other educational products from alumni
- Distributed 20,000+ TAS books and other NOAA education products
- 21 graduate credits awarded to TAS alumni

NOAA Northeast Region Teacher at Sea Alumni Workshop was held on May 19-20, 2012 in Woods Hole, MA at NOAA's Northeast Fisheries Science Center and Woods Hole Aquarium



2012 Return on Investment



A group of sixth and seventh grade students in TAS Rebecca Kimport's class at Capital City Public Charter School in Washington D.C. got a special visit from NOAA marine mammal biologist Dave Withrow on February 22, 2012.

Teacher at Sea Alumni

"Spending time with fellow educators is always excellent, as it allows us to swap ideas. These ideas can range from individual hands on demonstrations that we use in the classroom to entire lesson plans. The exchange of ideas that occur at these conferences help every educator who attends them to grow tremendously." – Jason Moeller, 2011 at NSTA in Louisville, KY 2012





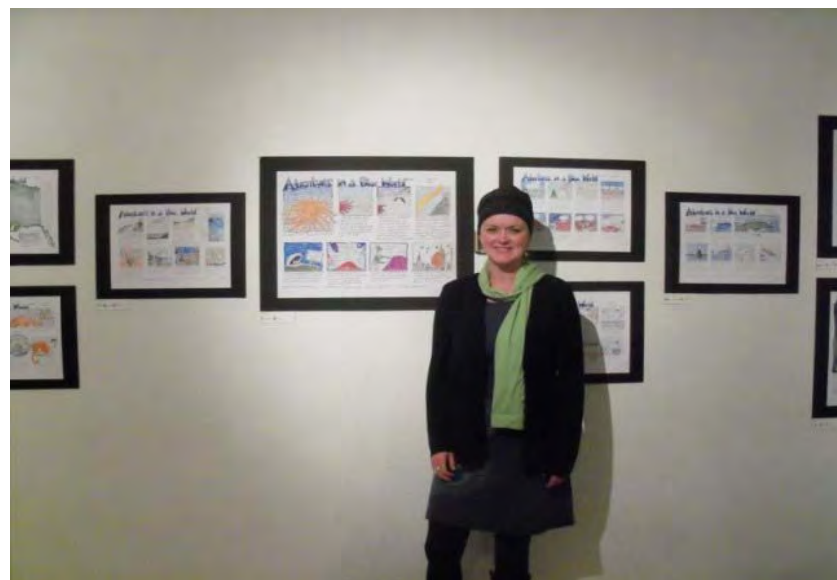
Partnerships

Internal

- Sponsoring NOAA Scientists and Offices
- Office of Marine and Aviation Operations
- NOAA Office of Education & Education Council
- National Marine Sanctuaries
- NOAA Corps and ships' crew

External

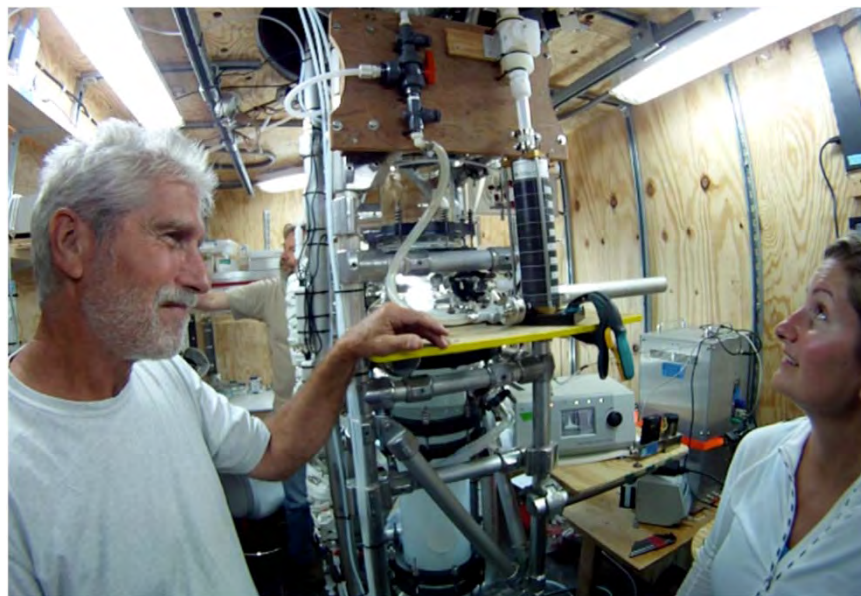
- TAS Alumni
- University of St. Francis
- PolarTREC (NSF)
- Project Maury (USNA and AMS)
- Smithsonian Ocean Hall
- Cal Poly State University



“My goal as an educator is to create life-long learners who are engaged, enthusiastic, interested in their surroundings, and connected to the world around them. I’m excited to share this TAS cartoon series with others to help them understand the importance of the ocean, even if they never get to see or touch it.” – Cat Fox, 2011 at a gallery opening featuring her artwork

Future Opportunities & Challenges

- Enhancing communication and outreach capabilities
- Continuing expansion of program
 - Teacher at Sea
 - Teacher in the Lab (pilot phase)
 - Teacher in the Field (pilot phase)
 - Teacher in the Air (pilot phase)
- Further leveraging of alumni network
- Sharing program outputs and outcomes



“I feel I have a better sense of logistics, challenges, and the mechanics of a field campaign. As a climate modeller, I have a much greater appreciation of the data collection challenges that goes into the observed data we use to validate our models. All the scientists on board were hugely enthusiastic about having a modeller come and learn more about data collection.” - Gina Henderson, 2012



A Teacher's Perspective...



"Special thanks to our Commanding Officer and Chief Scientist for supporting the Teacher at Sea program. I know I speak on behalf of many teachers when I say there are many, many ways I will be bringing your work into the classroom, and I hope, helping recruit some of the next generation of NOAA officers and scientists!" Johanna Mendillo, 2012 (left)

"The Teacher at Sea Program is such an amazing opportunity. The benefits of this full-immersion program far outweigh any textbook description of the scientific process. Being a part of the science team, interacting with the researchers, asking questions, hearing their discussions, it is truly awesome!" – Marsha Skoczek, 2012 (right)



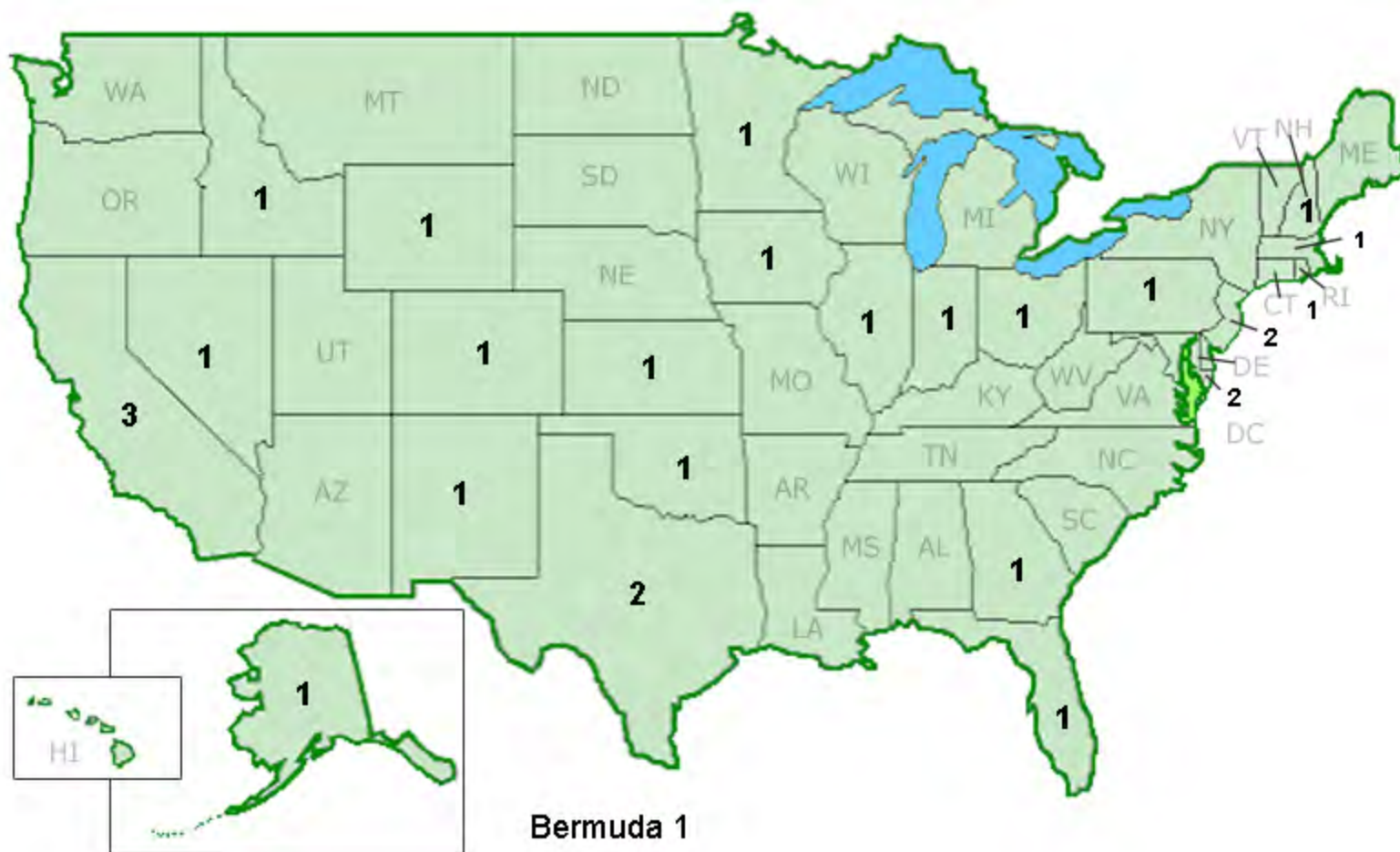
Background Material



Two NOAA Scientists Visit TASA Jennifer Goldner's Classroom and town Mayor Declares May 9, 2012 as NOAA Day in Jay, OK



2012 Teacher at Sea Class





2012 Teacher at Sea Class

	Teacher Last Name	Teacher First Name	Subjects	Grades	School City	School State	Cruise	Line Office	Cruise Dates	Cruise Ports	Ship
1	Andrews	Carmen	Science	5th, 2nd, 3rd, 4th, 6th, 7th, 8th	Bridgeport	CT	SEFIS Reef Fish Abundance Survey	NMFS/SEFSC	07/07/2012 - 07/18/2012	Savannah, GA	R/V Savannah
2	Baird	Kaitlin	Science, Science - Coral Reef Ecology, Science - Science Diving	Adult Education, University, Other - High School	New Hyde Park	NY	Autumn Bottom Trawl Survey	NMFS/NEFSC	09/04/2012 - 09/20/2012	Newport, RI	Henry B. Bigelow
3	Bogan	Valerie	Science - Science	6th, 7th	Kokomo	IN	SEAMAP Summer Groundfish Leg 1	NMFS/SEFSC	06/07/2012 - 06/20/2012	Pascagoula, MS - Galveston, TX	Oregon II
4	Campbell	Deborah	Science - 4 classes, English - 1 class reading/writing	7th	Chicago	IL	Ecosystems Monitoring Survey	NOS/GRNMS	05/14/2012 - 05/24/2012	Charleston, SC; Savannah, GA	Nancy Foster
5	Davenport	Scott	All subjects, Other - Physical Education	7th, 8th, 12th, 11th	Tununak	AK	Juvenile Rockfish Leg 2	NMFS/SWFSC	05/21/2012 - 05/27/2012	San Francisco, CA	Bell M. Shimada
6	DeLussey	Kathleen	English - Teacher Leader/ Writing Teacher/ specialist, Teacher Leader	1st - Full inclusion classes, 2nd, 4th, Kindergarten	Philadelphia	PA	Marine Protected Area Survey	NMFS/NEFSC	07/03/2012 - 07/18/2012	Newport, RI	Henry B. Bigelow
7	Frantz	Steven	Science	6th - science, 6th - science enrichment, 7th - science enrichment, 8th - science enrichment	Akron	OH	Snapper/Shark Longline Leg 1	NMFS/SEFSC	07/26/2012 - 08/08/2012	Pascagoula, MS - Mayport, FL	Oregon II



2012 Teacher at Sea Class

	Teacher Last Name	Teacher First Name	Subjects	Grades	School City	School State	Cruise	Line Office	Cruise Dates	Cruise Ports	Ship
8	Fry	Jennifer	All subjects	5th	Newbury Park	CA	Ecosystems/ Bottomfish Survey	NMFS/PIFSC	03/12/2012-03/26/2012	Pago Pago, AS	Oscar Elton Sette
9	Gillean	Alicia	All subjects - Library Media Specialist; Works with all teachers and students; all subjects	5th, 6th	Jenks	OK	Sea Scallop Survey Leg 3	NMFS/NEFSC	06/27/2012 - 07/07/2012	Woods Hole, MA	Hugh R. Sharp
10	Grant	David	Marine Science	Middle grades and college	Highlands	NJ	Western Boundary Time Series (WBTS)	OAR/AOML	02/15/2012-03/05/2012	Charleston, SC	Ronald H. Brown
11	Henderson	Gina	Science - Global Climate Change, Science - Meteorology, Science - Physical Geography	University	Annapolis	MD	Climate	OAR/PMEL	08/18/2012 - 08/26/2012	Boston, MA - Bermuda	Ronald H. Brown
12	Jambura	Stacey	All subjects - Gifted & Talented Program	Kindergarten, 1st, 2nd, 3rd, 4th, 5th	Waterloo	IA	SEAMAP Summer Groundfish Leg 3	NMFS/SEFSC	07/06/2012 - 07/17/2012	Pascagoula, MS	Oregon II
13	Kaiser	Susan	Science - Life Science, Other - Advisory	7th	Reno	NV	FKNMS Survey	NOS/FKNMS	07/26/2012 - 08/04/2012	Key West, FL	Nancy Foster
14	Keenan	Alexandra	Science - Physics, Science - Astronomy	11th, 12th	Rio Grande City	TX	Cetacean Biology	NMFS/NEFSC	06/18/2012 - 06/29/2012	Newport, RI	Henry B. Bigelow



2012 Teacher at Sea Class

	Teacher Last Name	Teacher First Name	Subjects	Grades	School City	School State	Cruise	Line Office	Cruise Dates	Cruise Ports	Ship
15	Madrigal	Maria	Science - Marine Biology	Other - PreK-College	Redondo Beach	CA	Fisheries AUV	NMFS/PIFSC	04/02/12 - 04/16/12	Pago Pago, American Samoa	Oscar Elton Sette
16	Mendillo	Johanna	Science	7th	Boston	MA	Pollock Acoustic Survey Leg 3	NMFS/AFSC	07/23/2012 - 08/10/2012	Dutch Harbor	Oscar Dyson
17	Nelson	Janet	Biology, Env. Science, Human Anatomy	10th, 11th, 12th	Red Lake	MN	Sea Scallop Survey Leg 2	NMFS/NEFSC	06/14/2012 - 06/30/2012	Lewes, DE - Woods Hole, MA	Hugh R. Sharp
18	Novak	Debra	Science	Kindergarten, 1st, 2nd, 3rd, 4th, 5th, PreK	Albuquerque	NM	Snapper/Shark Longline Leg 2	NMFS/SEFSC	08/10/2012 - 08/25/2012	Mayport, FL - Pascagoula, MS	Oregon II
19	O'Donnell	Ellen	Science, Science - science methods	7th, 8th, University	Deerfield	NH	Northern Right Whale Survey	NMFS/NEFSC	05/14/2012 - 05/25/2012	Woods Hole, MA	Delaware II
20	Oltman	Susan	Science - Earth Science	6th, 6th - Health	Atlanta	GA	STRATUS	WHOI	05/22/2012 - 06/04/2012	Valaparaíso, Chile and Galapagos	R/V Melville
21	Peretich	Amanda	Honors Chemistry 1 & 2, AP Chemistry, Criminal Science Investigations, Biology, Physics, Marine Ecology	10th, 11th, Other - 11th-12th, Other - 10th-12th	Knoxville	TN	Pollock Acoustic Survey Leg 2	NMFS/AFSC	06/29/2012 - 07/17/2012	Dutch Harbor, AK	Oscar Dyson

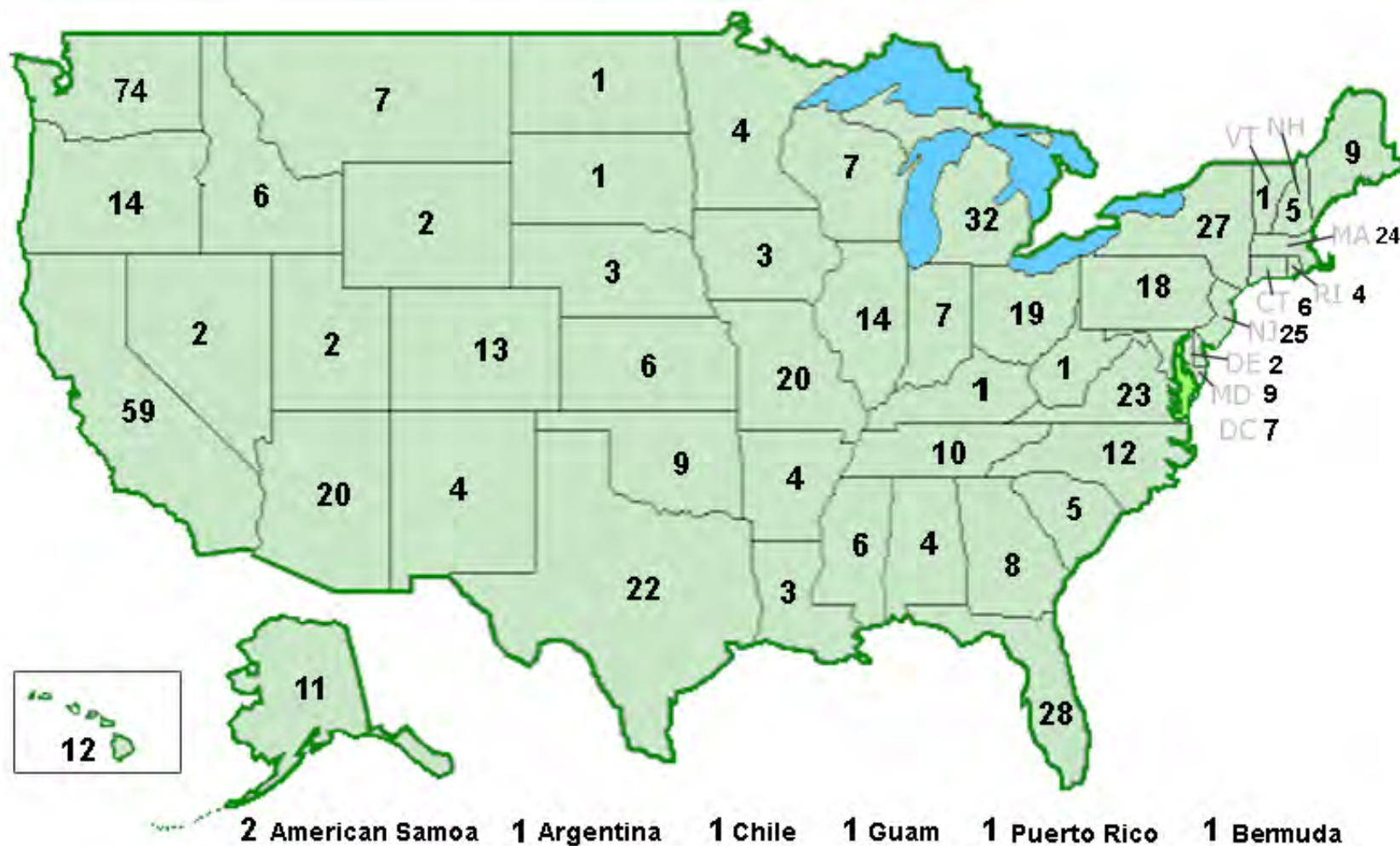


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Teacher Last Name	Teacher First Name	Subjects	Grades	School City	School State	Cruise	Line Office	Cruise Dates	Cruise Ports	Ship
22 Phipps	Allan	Solar & Alternative Energies, AP Environmental Science, Honors Biology	12th, 11th, 9th	Plantation	FL	Pollock Acoustic Survey Leg 3	NMFS/AFSC	07/23/2012 - 08/10/2012	Dutch Harbor	Oscar Dyson
23 Rawal	Bhavna	Science - IPC, Oceanography, Environmental Science	9th, 12th	Houston	TX	South Florida Program	OAR/AOML	08/06/2012 - 08/10/2012	Miami, FL	R/V Walton Smith
24 Romito	Talia	Oceanography, Earth Science, Biology	9/12/2012	Monterey	CA	Cordell Bank Ecosystems Survey	NOS/CBMS	07/24/2012 - 07/29/2012	Sausalito, CA	R/V Fulmar
25 Schmuttermair	Andrea	Science	3rd, 4th, 5th, 6th	Westminster	CO	SEAMAP Summer Ground Fish Leg 2	NMFS/SEFSC	06/22/2012 - 07/03/2012	Galveston - Pascagoula	Oregon II
26 Skoczek	Marsha	Science - Marine Biology, Science - Oceanography, Science - Advanced Global Science 1	Other - Grades 10-12, Other - Grades 9-12, 11th	Olathe	KS	Deep Water Corals	NMFS/SEFSC	07/06/2012 - 07/19/2012	Jacksonville, FL	Pisces
27 Struble	Wesley	Earth Science, Physical Science, Biology, Chemistry, Geometry	7th, 9th, 10th, & 11th	Moscow	Idaho	Western Boundary Time Series (WBTS)	OAR/AOML	02/15/2012-03/05/2012	Charleston, SC	Ronald H. Brown
28 Urasky	Lesley	Principles of Biomedical Sciences, Science - Geology/Astronomy	9th, 11th - 12th	Rawlins	WY	Caribbean Reef Fish Leg 2	NMFS/SEFSC	06/16/2012 - 06/30/2012	Frederiksted, USVI (St. Croix)-Mayport, FL	Pisces
29 Weaver	Kristy	All subjects	1st	Hillside	NJ	SEFIS Reef Fish Abundance Survey	NMFS/SEFSC	05/23/2012 - 05/31/2012	Savannah, GA	R/V Savannah



Teacher at Sea Alumni 1990 – 2012





NOAA Teacher in the Lab and Field 2012 Participants (Pilot Projects)

Lab	Scientist	Teacher	Grade	Research
Alaska Fisheries Science Center, Juneau	Bonita Nelson	Dustin Taylor	Pre-service	Krill
Alaska Fisheries Science Center, Juneau	Bonita Nelson	Brielle Kemis	Pre-service	Krill
Alaska Fisheries Science Center, Juneau	Bonita Nelson	Kathleen Galau	High School	Krill
Southwest Fisheries Science Center, La Jolla	Kelly Stewart	Shane Morales	Pre-service	Turtle
Southwest Fisheries Science Center, La Jolla	Kelly Stewart	Dana Tomlinson	Elementary School	Turtle
Northwest Fisheries Science Center	Gary Winans	Jon Baker	High School	Genetics
Northwest Fisheries Science Center	Gary Winans	Elizabeth Gutierrez	Pre-Service	Genetics
Northwest Fisheries Science Center	Gary Winans	Jennifer Duncan	High School	Genetics
Northwest Fisheries Science Center	Gary Winans	Michele Wolski	High School	Genetics
Northwest Fisheries Science Center	Gary Winans	Amanda Cope	High School	Genetics
Northwest Fisheries Science Center	Gary Winans	Rachelle Carnes	High School	Genetics



NOAA Teacher at Sea Program Goals

Short-term Goals (Skills and Knowledge)

Teachers will:

- Understand how NOAA oceanic and atmospheric research is linked to National Education Science Standards and Ocean Literacy Principles.
- Understand the education and training paths that lead to NOAA-related careers.

Mid-term Goals (Behavior and Action)

Teachers will:

- Use NOAA data and resources in classroom activities.
- Use NOAA-related career information in classroom activities, when mentoring students and when working with colleagues.

Long-term Goals (Social, Environmental, and Economic)

In support of NOAA's mission, the Teacher at Sea Program will:

- Build an understanding of earth system science among teachers and students.
- Build a workforce for science, technology, engineering, and math careers.

Note: Goals were created using the Bennett Logic Model. External evaluation data indicates we are meeting our Short- and Mid-term Goals, and beginning to meet long-term goal.



History & Status

A matrix program, NOAA's Teacher at Sea Program is housed within NOAA Fisheries, receiving support from the Office of Marine and Aviation Operations and providing educational resources to all the NOAA line offices.

OMAO Years

- 1990: Established within OMAO by NOAA Corps Officer (LT Ilene Byron)
- 2003: OMAO hired program manager
- 2004 – 2007: Program in formative years

NMFS Years

- 2008: Program moved to NMFS for expansion
 - Teacher in the Lab, Teacher in the Field, and Teacher in the Air are being piloted
- 2011 - present: Program operating out of Fisheries Communications Office



Operations

Call for Applications (October)

- Call for applications takes place from 10/1 – 10/31
- Eligible candidates include full-time K-20 teachers, as well as museum and aquaria educators
- Receive an average 200 applications per year

Selections (December – January)

- Applications reviewed by a panel of 50+ TAS alumni and NOAA employees
- Reviews follow rubric
- Number of participants determined by budget, but usually around 30
- Final selections approved by NMFS Deputy Assistant Administrator and applicants notified by March



Operations (continued)

Placement Process (February – November)

- Ship Placement – Teachers matched with cruise based on availability, research interests, and geographical preferences
- Training – Teachers must complete online training course prior to sailing
- Deliverables – Teachers must agree to a Statement of Work but prior to sailing (Standard, but can be modified)
- Travel – Program funds and arranges for participants (at least one month before cruise)
- Communication
 - With teacher (frequent)
 - With scientist (frequent)
 - With ship XO (frequent)