

**Ship Observations Team  
National Report for 2009**

<b>1. Country</b>	<b>United States of America</b>
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<b>2. Prepared by</b>	Robert A. Luke, VOS Program Manager, NOAA/National Weather Service
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**3. Contributing national marine organizations:**

#                      Insert as applicable – VOS / VOSclim / SOOP / ASAP – Include additional detail where appropriate e.g (data management).

<b>Organization</b>	NOAA/NWS/NDBC
<b>Programmes #</b>	VOS
<b>Website URL</b>	<a href="http://www.vos.noaa.gov/">http://www.vos.noaa.gov/</a>

<b>Organization</b>	NOAA/NWS/NDBC & NOAA/NCDC
<b>Programmes #</b>	VOSclim
<b>Website URL</b>	<a href="http://www.vos.noaa.gov/vosclim.shtml">http://www.vos.noaa.gov/vosclim.shtml</a> or <a href="http://www.ncdc.noaa.gov/oa/climate/vosclim/vosclim.html">http://www.ncdc.noaa.gov/oa/climate/vosclim/vosclim.html</a>

<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-VOS
<b>Website URL</b>	<a href="http://www.aoml.noaa.gov/phod/goos">http://www.aoml.noaa.gov/phod/goos</a>

<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-XBT
<b>Website URL</b>	<a href="http://www.aoml.noaa.gov/phod/goos.php">http://www.aoml.noaa.gov/phod/goos.php</a>

<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-High Density XBT
<b>Website URL</b>	<a href="http://www.aoml.noaa.gov/phod/hdenxbt">http://www.aoml.noaa.gov/phod/hdenxbt</a>
<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-SIO High Density XBT
<b>Website URL</b>	<a href="http://www-hrx.ucsd.edu/">http://www-hrx.ucsd.edu/</a>
<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-Argo Program
<b>Website URL</b>	<a href="http://www.aoml.noaa.gov/phod/argo/index.php">http://www.aoml.noaa.gov/phod/argo/index.php</a>
<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-Global Drifter Program
<b>Website URL</b>	<a href="http://www.aoml.noaa.gov/phod/dac">http://www.aoml.noaa.gov/phod/dac</a>
<b>Organization</b>	NOAA/OAR/AOML/Global Ocean Observing Systems (GOOS) Center
<b>Programmes #</b>	SOOP-WHOI Autolmet Program
<b>Website URL</b>	<a href="http://uop.whoi.edu/vos/">http://uop.whoi.edu/vos/</a>
<b>Organization</b>	NOAA/OAR/AOML-PMEL
<b>Programmes #</b>	SOOP-pCO2
<b>Website URL</b>	<a href="http://www.aoml.noaa.gov/ocd/gcc/co2research/index.html">http://www.aoml.noaa.gov/ocd/gcc/co2research/index.html</a>
<b>Website URL</b>	<a href="http://www.pmel.noaa.gov/co2/co2-home.html">http://www.pmel.noaa.gov/co2/co2-home.html</a>
<b>Organization</b>	NOAA/OAR/CMDL
<b>Programmes #</b>	SOOP-CO2
<b>Website URL</b>	<a href="http://www.oar.noaa.gov/atmosphere/atmos_cmdl.html">http://www.oar.noaa.gov/atmosphere/atmos_cmdl.html</a>

Appendix 1: List of National Focal Points for SOT / VOS / VOSClim / SOOP / ASAP

(insert Country)

<b>Focal Point *</b>	<b>VOS</b>	<b>VOS</b>	<b>VOSClim</b>
<b>Name</b>	Robert Luke	John Wasserman	Alan Hall
<b>Title</b>	VOS Project Manager	VOS Operations Manager	IT Team Lead/ VOSClim TT Chair
<b>Agency</b>	NOAA/NWS/NDBC	NOAA/NWS/NDBC	NOAA/NCDC
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<b>Email</b>	<a href="mailto:Robert.luke@noaa.gov">Robert.luke@noaa.gov</a> or <a href="mailto:vos@noaa.gov">vos@noaa.gov</a>	<a href="mailto:John.wasserman@noaa.gov">John.wasserman@noaa.gov</a> or <a href="mailto:vos@noaa.gov">vos@noaa.gov</a>	<a href="mailto:Alan.hall@noaa.gov">Alan.hall@noaa.gov</a>
<b>Telephone</b>	228-688-1457	228-688-1818	828-271-4071
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<b>Focal Point *</b>	<b>VOSClim</b>	<b>SOOP</b>	<b>SOOP</b>
<b>Name</b>	Eric Freeman	Dr. Gustavo Goni	Jim Farrington
<b>Title</b>	Meteorologist/Senior Analyst – SourceCorp inc.	Oceanographer	SEAS Logistics
<b>Agency</b>	NOAA/NCDC	NOAA/OAR	NOAA/OAR
<b>Postal Address</b>	151 Patton Avenue Asheville, NC 28801-5001	4301 Rickenbacker Causeway. Miami FL 33149	439 West York Street Norfolk, VA 23510
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<b>Telephone</b>	828-271-4463	305-361-4339	757-441-3062
<b>Facsimile</b>	828-271-4022	305-361-4412	757-441-6495

<b>Focal Point *</b>	<b>SOOP</b>	<b>SOOP</b>	<b>SOOP</b>
<b>Name</b>	Carrie Wolfe	Jonathan Molina	Steve Noah
<b>Title</b>	SOOP Contractor	Oceanographer/SEAS Operations	SOOP Contractor
<b>Agency</b>	SCMI	NOAA/OAR	Olympic Computer Services
<b>Postal Address</b>	439 West York St.	4301 Rickenbacker Causeway Miami, FL 33149	800 West Park Ave. Suite 1 Port Townsend, WA 98368
<b>Email</b>	<a href="mailto:Hbbio048@csun.edu">Hbbio048@csun.edu</a>	<a href="mailto:Jon.Molina@noaa.gov">Jon.Molina@noaa.gov</a>	<a href="mailto:KARSTENO@aol.com">KARSTENO@aol.com</a>
<b>Telephone</b>	310-519-3181	305-361-4304	425-238-6501
<b>Facsimile</b>	310-519-1054	305-361-4366	360-385-2400

<b>Focal Point *</b>	<b>SOOP</b>	<b>SOOP</b>	<b>SOOP</b>
<b>Name</b>	Derrick Snowden	Dr. Francis Bringas	Dr. Dean Roemmich
<b>Title</b>	Oceanographer	Oceanographer/SEAS Operations	Professor (MLRG/PORD)
<b>Agency</b>	NOAA	NOAA Atlantic Oceanographic and Meteorological Laboratory	Scripps Institution of Oceanography, UCSD
<b>Postal Address</b>	1100 Wayne Avenue Suite 1202 Silver Spring, MD 20910	4301 Rickenbacker Causeway Miami, FL 33149	9500 Gilman Drive # 0230 La Jolla, CA 92093-0230
<b>Email</b>	<a href="mailto:derrick.snowden@noaa.gov">derrick.snowden@noaa.gov</a>	<a href="mailto:francis.bringas@noaa.gov">francis.bringas@noaa.gov</a>	<a href="mailto:droemmich@ucsd.edu">droemmich@ucsd.edu</a>
<b>Telephone</b>	301-427-2464	(305) 361-4316	(858) 534-2307
<b>Facsimile</b>	301-427-0033	(305) 361-4412	(858) 534-0704

\* Insert as appropriate - SOT / VOS / VOSClm / SOOP / ASAP

## Appendix 2: List of Port Meteorological Officers

(insert Country)

Port / Office	ANCHORAGE, AK	BALTIMORE, MD	CHARLESTON, SC
<b>Name</b>	Larry Hubble	Lori Evans	Tim Kenefick
<b>Title</b>	PMO	PMO	PMO
<b>Postal Address</b>	National Weather Service Alaska Region 222 West 7th Avenue #23 Anchorage, AK 99513-7575	National Weather Service, NOAA Maritime Center I, Suite 287 2200 Broening Highway Baltimore, MD 21224-6623	NOAA Coastal Services Center 2234 South Hobson Avenue Charleston, SC 29405-2413
<b>Email</b>	<a href="mailto:pmoanc@noaa.gov">pmoanc@noaa.gov</a>	<a href="mailto:pmobal@noaa.gov">pmobal@noaa.gov</a>	<a href="mailto:pmochs@noaa.gov">pmochs@noaa.gov</a>
<b>Telephone</b>	907-271-5135	410-633-4709	843-740-1281
<b>Facsimile</b>	907-271-3711	410-633-4713	843-740-1289
<b>Comment</b>		Reported on board September, 2009	

Port / Office	DULUTH, MN / GREAT LAKES	FORT LAUDERDALE, FL	HONOLULU, HI
<b>Name</b>	Ron Willams	David Dellinger	Derek LeeLoy
<b>Title</b>	PMO	PMO	Ocean Services Program Coordinator /PMO
<b>Postal Address</b>	National Weather Service, NOAA 5027 Miller trunk Hwy Duluth, MN 55811-1442	National Weather Service/NOAA 2550 Eisenhower Blvd., Suite 312 Fort Lauderdale FL 33316	National Weather Service Pacific Region HQ Grosvenor Center, Mauka Tower 737 Bishop Street, Suite 2200 Honolulu, HI 96813-3201
<b>Email</b>	<a href="mailto:pmoglakes@noaa.gov">pmoglakes@noaa.gov</a>	<a href="mailto:pmomia@noaa.gov">pmomia@noaa.gov</a>	<a href="mailto:pmohon@noaa.gov">pmohon@noaa.gov</a>
<b>Telephone</b>	218-729-0651 x 371	954-463-4271	808-532-6439
<b>Facsimile</b>	218-729-0690	954-462-8963	808-532-5569
<b>Comment</b>	Reported on board May 2009		

Port / Office	HOUSTON, TX	JACKSONVILLE, FL	KODIAK, AK
<b>Name</b>	Chris Fakes	Robert Niemeyer	Richard Courtney
<b>Title</b>	PMO	PMO	PMO
<b>Postal Address</b>	National Weather Service, NOAA 1353 FM646 Dickinson, TX 77539	National Weather Service, NOAA 13701 Fang Road Jacksonville, FL 32218-7933	National Weather Service, NOAA 600 Sandy Hook Street, Suite 1 Kodiak, AK 99615-6814
<b>Email</b>	<a href="mailto:pmohou@noaa.gov">pmohou@noaa.gov</a>	<a href="mailto:pmojax@noaa.gov">pmojax@noaa.gov</a>	<a href="mailto:pmokdk@noaa.gov">pmokdk@noaa.gov</a>
<b>Telephone</b>	281-534-2640	904-741-5186 Ext. 117	907-487-2102
<b>Facsimile</b>	281-337-3798	904-741-0078	907-487-9730
<b>Comment</b>			

Port / Office	LONG BEACH, CA	NEW ORLEANS, LA / GULF COAST	NEW YORK CITY, NY
<b>Name</b>	Brian Holmes	Paula Rychtar	James Luciani
<b>Title</b>	PMO	PMO	PMO
<b>Postal Address</b>	National Weather Service, NOAA 501 West Ocean Blvd., Room 4480 Long Beach, CA 90802-4213	NOAA/NMFS Mississippi Laboratories 3209 Fredric St. Room 118 Pascagoula, MS 39568-1207	National Weather Service, NOAA 110 Main Street, Suite 201 South Amboy, NJ 08879-1367
<b>Email</b>	<a href="mailto:pmolax@noaa.gov">pmolax@noaa.gov</a>	<a href="mailto:pmomasy@noaa.gov">pmomasy@noaa.gov</a>	<a href="mailto:pmonyc@noaa.gov">pmonyc@noaa.gov</a>
<b>Telephone</b>	562-980-4090	504-289-2294	732-316-5409
<b>Facsimile</b>	562-980-4089		732-316-7643
<b>Comment</b>	Reported on board March 2009		

Port / Office	NORFOLK, VA	SAN FRANCISCO BAY AREA	SEATTLE, WA
Name	Peter Gibino	Daniel Curtis	Patrick Brandow
Title	PMO	PMO	PMO
Postal Address	National Weather Service, NOAA 4034-B Geo. Wash. Mem. Hwy. Yorktown, VA 23692-2724	National Weather Service, NOAA 1301 Clay Street, Suite 1190N Oakland, CA 94612-5217	National Weather Service, NOAA 7600 Sand Point Way, N.E. BIN C15700 Seattle, WA 98115-6349
Email	<a href="mailto:pmonor@noaa.gov">pmonor@noaa.gov</a>	<a href="mailto:pmooak@noaa.gov">pmooak@noaa.gov</a>	<a href="mailto:pmosea@noaa.gov">pmosea@noaa.gov</a>
Telephone	757-877-1692	510-637-2960	206-526-6100
Facsimile	757-877-9561	510-637-2961	206-526-4571 or 6094
Comment			

Port / Office	VALDEZ, AK	All PMOs	
Name	Peggy Perales		
Title	OIC / PMO		
Postal Address	National Weather Service, NOAA Box 427 Valdez, AK 99686-0427		
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Telephone	907-835-4505		
Facsimile	907-835-4598		
Comment			

## SOOP Report for 2009

## United States of America

a. Programme description:			
Line	Agency	Sampling programme and mode (if applicable)	No. of ships
AX07	SOOP SEAS/AOML	HD	3
AX07	SOOP SEAS/AOML	FR	2
AX08	SOOP SEAS/AOML	HD	3
AX08	SOOP SEAS/AOML	FR	3
AX10	SOOP SEAS/AOML	HD	1
AX10	SOOP SEAS/AOML	FR	1
AX18	SOOP SEAS/AOML	HD	2
AX19	SOOP SEAS/AOML	HD	1
AX22	SOOP SEAS/SIO	HD	2
AX25	SOOP SEAS/AOML	HD	1
AX25	SOOP SEAS/AOML	FR	1
AX32	SOOP SEAS/AOML	HD	1
AX32	SOOP SEAS/AOML	FR	1
AX97	SOOP SEAS/AOML	HD	4
IX06	SOOP SEAS/SIO	HD	1
IX12	SOOP SEAS/SIO	HD	1
IX15	SOOP SEAS/SIO	HD	2
IX21	SOOP SEAS/SIO	HD	3
PX05	SOOP SEAS/SIO	HD	2
PX06	SOOP SEAS/SIO	HD	3
PX08	SOOP SEAS/SIO	HD	1
PX08	SOOP SEAS/AOML	FR	2
PX09	SOOP SEAS/SIO	HD	1
PX10	SOOP SEAS/SIO	HD	1



PX10	SOOP SEAS/AOML	FR	2
PX13	SOOP SEAS/SIO	HD	1
PX13	SOOP SEAS/SEAS	FR	2
PX26	SOOP SEAS/AOML	FR	2
PX31	SOOP SEAS/SIO	HD	3
PX31	SOOP SEAS/AOML	FR	1
PX37	SOOP SEAS/SIO	HD	2
PX37	SOOP SEAS/AOML	FR	2
PX38	SOOP SEAS/SIO	HD	2
PX44	SOOP SEAS/SIO	HD	1
PX44	SOOP SEAS/AOML	FR	2
PX83	SOOP SEAS/AOML	FR	1

<b>b. Data management</b>		
<b>Agency</b>	<b>No. of JJVV messages on the GTS in 2007</b>	<b>Location of delayed-mode data</b>
NOAA/AOML-SEAS	6757	NODC/AOML/SIO/CSIRO
SIO-SEAS	6476	NODC/AOML/SIO/CSIRO

**c. Major challenges and difficulties:**

- A real time transmission and quality control procedure for the thermosalinograph (TSG) data collected on board the cargo ships is fully implemented. Delayed time quality control procedures including buddy check and visual quality control are under development.
- Transect AX18 (Buenos Aires to Cape Town) continues to be a serious challenge as it is very difficult to find ships doing this route. No AX18 transect was carried during 2009. An alternate route between Cape Town and Santos (AX17) is being done when ships are available.
- The Reykjafoss was recruited as a replacement for Skogafoss. During 2009 54 expendable bathythermograph (XBT) profiles were obtained from this ship. Real-time data transmissions as well as the implementation of high and low density XBT regular sampling, atmospheric and oceanic carbon dioxide and thermosalinograph observations from this ship are not fully implemented.
- Recruiting ships for high density transect PX50 continues to be a problem.
- Not all data from deployments by international partners are transmitted into the GTS.

**d. Research / development / testing:**

- Using SEAS 2000 data acquisition software: all SEAS XBT data continue being transmitted from SOO to NOAA in full resolution profiles and all data are placed into the GTS by NOAA.
- Iridium satellite transmission protocols continue being used for real-time transmission of TSG and XBT data collected with SEAS 2000 on the Oleander. Iridium transmissions are also being used for TSG data from the MV Explorer and the MV Barcelona Express, and for HD XBT data transmissions on AX10.
- An extended autolauncher has been developed and tested at AOML allowing for the deployment of several types of probes including Deep Blue, Fast Deep and T5.
- Several test of XBT data transmissions to the GTS using BUFR format were performed during 2009. These tests will continue during 2010 and will include TSG data.

**e. Other comments:**

- We continue to participate in collaborative programs with other institutions involved with XBT programs. Our contribution to the collaboration comes in the form of donating probes and supporting equipment when needed in exchange for management and ship greeting services. In particular, during 2009 we shipped 324 probes to IRD/Noumea, 540 probes to IRD/Brest, 324 probes to Brazil, and 648 probes to Australia.
- XBT transects were re-evaluated following international and regional scientific panel recommendations, discussed during the OceanObs09 meeting held in Venice in September 2009.

## VOS and VOSClm Report for 2009

a. Programme description:		
Category	No. of ships at 31 Dec 2009	Comments
<i>Selected</i>	845	
<i>Supplementary</i>	287	
<i>Auxiliary</i>	100	
<i>Other (specify)</i>	15	Currently not assigned to any category
<b>Total National VOS Fleet</b>	1247	

b. VOS:	
<i>Number of VOS vessels recruited in 2009</i>	177
<i>Number of VOS vessels de-recruited in 2009</i>	269
<i>Target number of ships in the national VOS Fleet</i>	1000+

c. VOSClm:	
<i>Number of VOSClm vessels at 31 December 2009</i>	17
<i>Number of VOSClm vessels recruited in 2009</i>	0
<i>Number of VOSClm de-recruitments in 2009</i>	0
<i>Number of VOSClm recruitments planned for 2010</i>	10
<i>Target number of ships to participate in VOSClm</i>	50

<b>d. Automated observing systems:</b>				
<b>Type</b>	<b>No. of ships at 31 Dec 2009</b>	<b>Manual Input Yes / No</b>	<b>Method of Comms</b>	<b>2010 Planned installations</b>
NOAA SCS (Science Computing System) (Type 1)	23	N	Iridium/Email	Converting all these systems to SEAS E-Logbook for Augment capability
NOAA SCS (Science Computing System) via SEAS E- Logbook (Type 2 & 3)	2	Y	Iridium/Email	
				Start recruiting USCG & Research vessels into auto reporters
	25			

<b>e. Data management:</b>	
<i>Total number of ship observations (BBXX) distributed on the GTS in 2009</i>	370,701
<i>Number of submissions of VOS data to the GCC in 2009</i>	Quarterly

<b>f. Electronic logbooks: (do not include AWS-based systems)</b>		
<b>Software &amp; version</b>	<b>No. of ships at 31 Dec 2009</b>	<b>Implementation plans</b>
Seas 8.0	158	Version dated 09/18/2008 – contains SOT5 modifications
Seas 6.57	324	Version dated 01/13/2007 – Contains Correction to Dewpoint Calculation method & encoding
SEAS but unknown version	42	Upgrade older versions to 8.0
Turbowin (unknown version)	3	
Unknown Logbook and version	720	Continue annotating true Logbook meta data into MyVOS

**g. Major challenges and difficulties:**

Replacement digital barometer/graph that meets WMO-8 & NOAA requirements

- Power issues (DC or battery support)
- Calibration (adjustment) reset with loss of power

Awaiting authorization to modify electronic packages on NOAA vessels for observation automation effort

Port Security and Safety concerns

- Non availability of port safety awareness training

Collection of missing metadata

Not having true & recent International Pub47 available operationally

**h. Research / development / testing:**

Continue with modifications and enhancements of MyVOS database and incorporating these changes into IVOS worldwide database

- WMO Pub47 ingest capability
- Lloyd's Ship database change automated update
- Full ad-hoc report generation capability
- <https://ivos.ndbc.noaa.gov>

Replacement digital barometer/graph that meets WMO-8 & NOAA requirements

Develop Port Safety Awareness training for all PMOs and other NOAA personnel

**i. Other comments:**

Continue collection of ship meta data information for complete Pub47 record.