

U.S. GEOTRACES Update

22 September 2010

GEOTRACES SSC Meeting

LEGOS - Toulouse, France

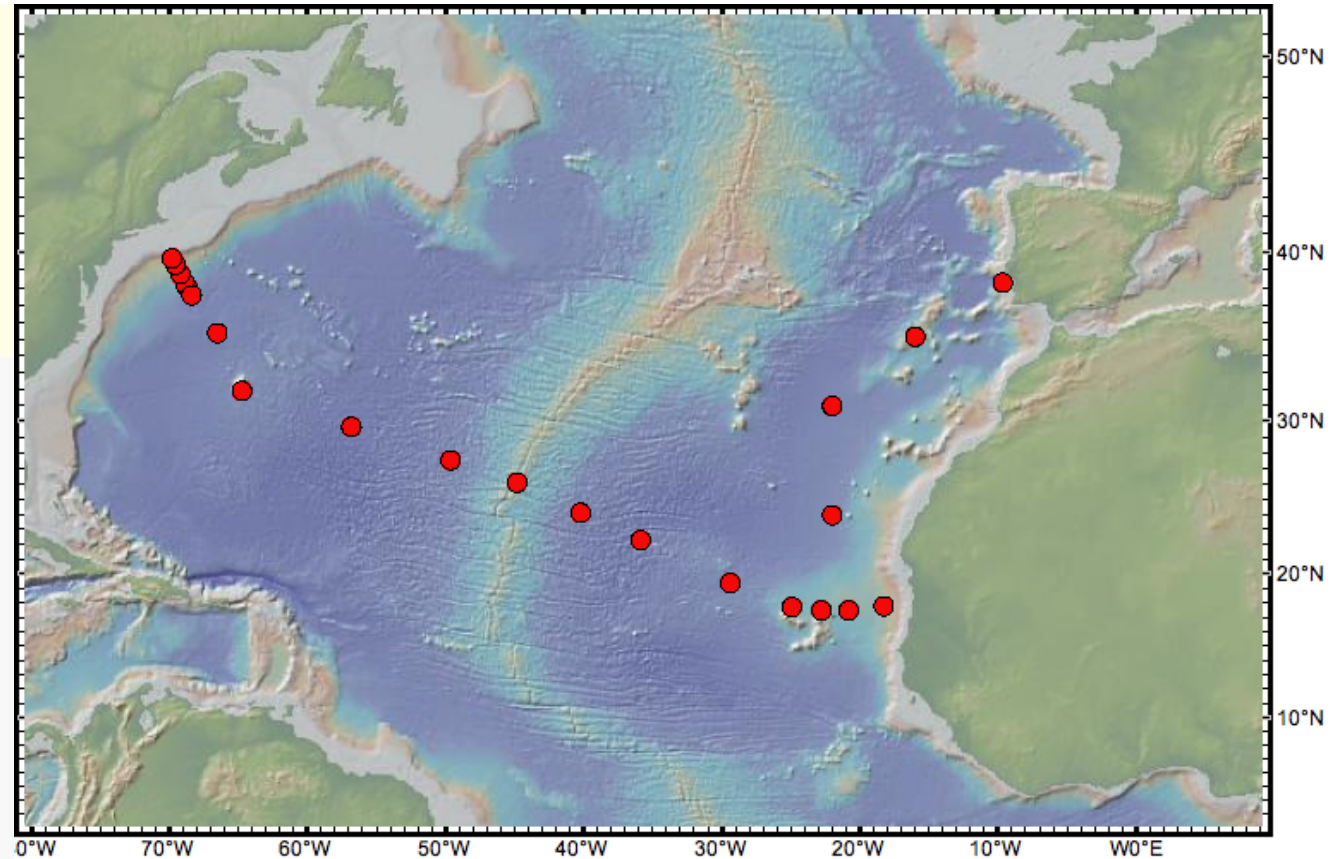
Bob Anderson

U.S. GEOTRACES Update

Activities in 2010

- 1) Hosted final Intercalibration Workshop 8-10 March
- 2) Atlantic cruise planning workshop 11-12 March
- 3) US SSC meeting 1-2 June
- 4) Arctic planning workshop 29 Sept.-1 October
- 5) Atlantic Cruise 15 October - 5 December
- 6) Pacific planning

U.S. N Atlantic Section



- 1) Lisbon-Woods Hole; 15 October - 5 December, 2010
- 2) Objectives
 - 1) Med outflow
 - 2) OMZ processes
 - 3) EBC upwelling/High Productivity
 - 4) MOR fluxes
 - 5) AMOC and TEI tracers
 - 6) Dust and Continental Margin sources/sinks

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N Atlantic Parameters (1 of 2)

- Standard hydrographic
 - CTD, O₂, fluorescence, transmissometer
 - S, O₂, nutrients (conventional and nanomolar)
- Tracers
 - CFCs, SF₆, ³H-³He, ¹⁴C, u-way O₂/Ar, noble gases, bomb (Cs, Pu, Np) isotopes
- Other/bio-optical
 - DOC/CDOM, pigments
 - DIC-system
- Atmospheric Deposition
 - Aerosols & rainfall samples
 - Mn, Fe, Co, Ni, Cu, Zn, Cd, and Pb

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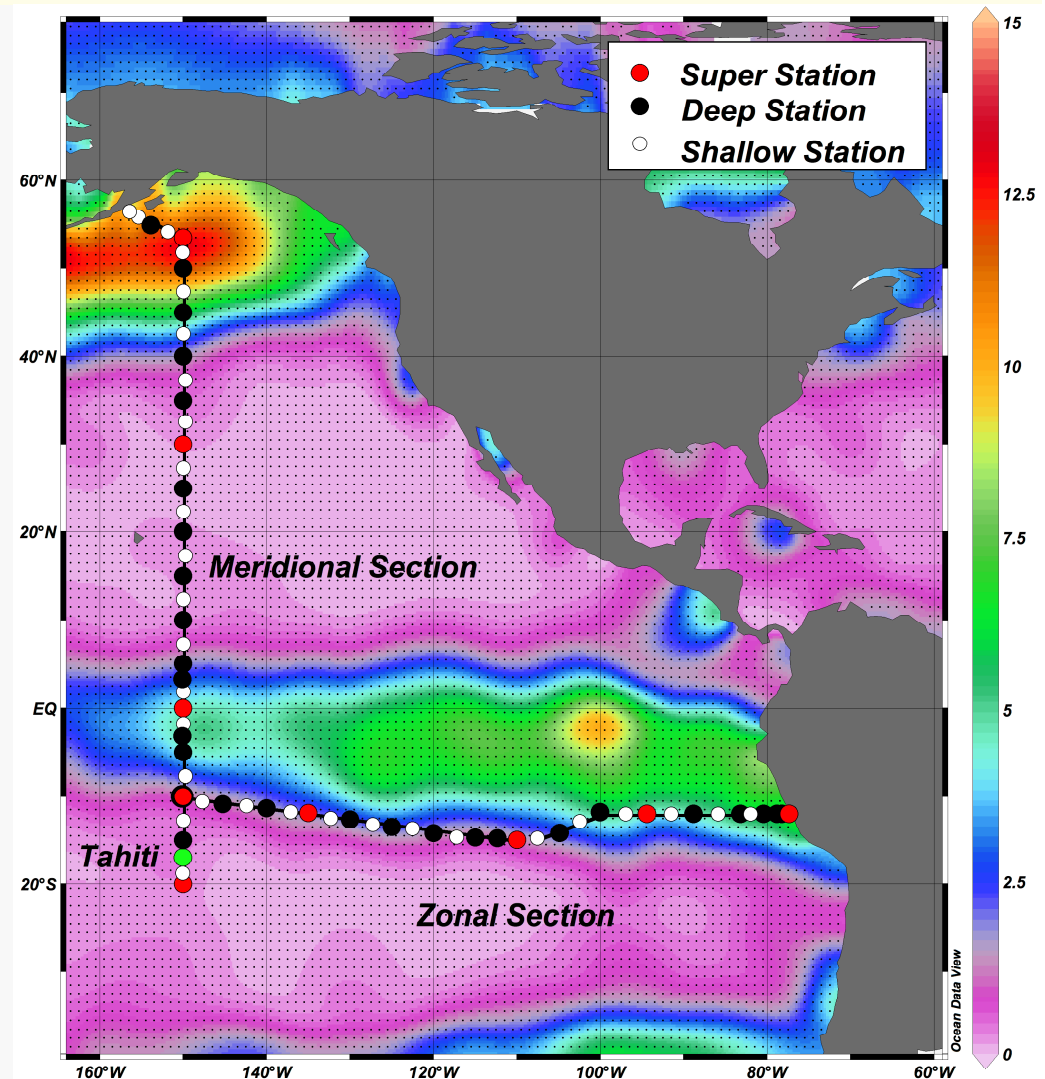
N Atlantic Parameters (2 of 2)

- Isotopes...
 - Stable: C, N, O, Si, Fe, Nd, Pb
 - Radioactive: ^{210}Po , ^{210}Pb , ^{222}Rn ,
 $^{223,224,226,228}\text{Ra}$, ^{234}Th , ^{231}Pa , $^{230,232}\text{Th}$
- Concentrations of ...
 - Cu, Fe, Al, Mn, Co, Zn, Hg, V, Ga, Cd, Ni, Mo, Pb, Ag, Zr, Hf, Nb, Ta, REE
- Speciation of...
 - Cu, Fe, Hg
- Particles
 - size-fractionated (<0.8 μm , 0.8-51 μm , >51 μm)
 - Fe, Al, Zn, Mn, Cd, Cu, Co, Ti, Ba, V, Ni, Mo
 - CaCO_3 , bio-Si, lithogenics, radionuclides

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Proposed Pacific Sections

- 1) Zonal section first
- 2) Meridional section follows
- 3) Tahiti-Peru
- 4) OMZ/Margin processes
- 5) EPR fluxes



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Timeline for first Pacific Expedition

- 1) Initial workshop October 2008 led to Implementation Plan
- 2) Plan approved by US SSC June 2009
- 3) Timeline set by US SSC and NSF in June, 2010
- 4) Management proposal to NSF February 2011
- 5) Planning workshop June 2011
- 6) Individual proposals to NSF August 2011
- 7) Cruise in late 2012 or early 2013

US GEOTRACES Clean Sampling System

- Seabird Trace Element-clean Carousel with (24) 12 L GO-Flo bottles, capable of firing up to 3 at once, Ti housings on CTD and sensors (T, S, O₂, fluor, trans); back up sensors and 52 GO-Flos
- Dynacon traction winch with 7800 m of 14 mm Kevlar conducting cable (+ 20' flat rack container)
- Clean lab van/container (UNOLS compliant)
- Portable A-frame (+ 20' flat rack container)
- Boom, etc. for towing underway, clean “fish”

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