U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Atlantic Oceanographic and Meteorological Laboratory
4301 Rickenbacker Causeway Miami FL 33149
TEL: 305-361-4328
FAX: 305-361-4392
EMAIL: ryan.smith@noaa.gov

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PRELIMINARY CRUISE REPORT

STATE DEPARTMENT CRUISE ID:
DOS-2007-105

NOAA CRUISE ID:
NF-08-05

SHIP NAME:
NOAA Ship Nancy Foster

OPERATING AGENCY:
National Oceanic and Atmospheric Administration (NOAA)

PROJECT TITLE:
Coral Reef Ecosystem Research

CRUISE DATES:
March 11, 2008 through March 24, 2008

CHIEF SCIENTIST:
Ryan H. Smith
NOAA/AOML/PhOD
4301 Rickenbacker Causeway
Miami, FL 33149 USA
305-361-4328 (tel)
305-361-4392 (fax)

CLEARANCE COUNTRIES:
United Kingdom, for Anguilla and British Virgin Islands
Guadeloupe/France, for Saint Martin and Saint Barthelemy
Netherlands Antilles, for Saba, Sint Eustatius, and Sint Maarten
Saint Kitts and Nevis

PORT OF EMBARKATION:
San Juan, Puerto Rico (USA)

PORT OF DISEMBARKATION:
San Juan, Puerto Rico (USA)

PARTICIPANTS (SCIENTIFIC PERSONNEL):

Name	Sex	Nationality	Affiliation
Ryan Smith	M	USA	NOAA/AOML/PhOD
Elizabeth Johns	F	USA	NOAA/AOML/PhOD
Nelson Melo	M	USA	NOAA/AOML/PhOD
Grant Rawson	M	USA	NOAA/AOML/PhOD
John Lamkin	M	USA	NOAA/NMFS/SEFSC
Trika Gerard	F	USA	NOAA/NMFS/SEFSC
Estrella Malca	F	USA	NOAA/NMFS/SEFSC
Anne Morgan	F	USA	NOAA/NMFS/SEFSC
Barbara Muhling	F	Australia	NOAA/NMFS/SEFSC
Aki Shiroza	M	Japan	NOAA/NMFS/SEFSC
Francisco Fuenmayor	M	USA	NOAA Corps. (SEFSC)
Kevin Brown	M	USA	UVI, St. Thomas

PROJECT OVERVIEW:

The United States Virgin Islands' (USVI) Grammanik Bank, located to the south of St. Thomas, is the site of a multi-species spawning aggregation for economically important fish including yellowfin grouper, Nassau grouper, tiger grouper, and dog snapper. Fishing pressure at this suspected source of larval recruits prompted the Caribbean Fisheries Council in 2004 to close the bank yearly from February - April. A series of banks south of the USVI (St. Thomas and St. John) and the British Virgin Islands (BVI) provide similar habitats and spawning aggregation sites. Prior to the inception of this study, the biological and physical processes which drive production on these banks, the circulation connecting these banks, and the flows across these banks had not been quantified. As the 2004 management decisions were made in the absence of these data, regional Marine Protected Area [MPA] designations and temporary closures are presently based on professional judgment rather than quantifiable, defensible scientific information.

To address this data gap, National Oceanic and Atmospheric Administration (NOAA) scientists from the Southeast Fisheries Science Center (SEFSC) and Atlantic Oceanographic and Meteorological Laboratory (AOML) in Miami, Florida, working with scientists from the University of the Virgin Islands (UVI) in St. Thomas are presently conducting a three-year interdisciplinary research project utilizing the *NOAA Ship Nancy Foster* to conduct biological and physical oceanographic surveys of the Virgin Islands' (VI) bank ecosystems and surrounding regional waters. The long-term sustainability of fisheries in the VI and surrounding regions will depend on a comprehensive understanding of regional spawning aggregations, larval transport, and overall larval recruitment in the study area.

The project is directed at answering one over-arching question: How are unprotected VI banks, MPAs such as the Hind Bank Marine Conservation District, seasonally closed areas such as the Grammanik Bank, and inshore areas ecologically linked via regional reef fish larval dispersal, transport, and life-history patterns?

CRUISE (OPERATIONAL) DETAILS:
The project's second research cruise (DOS-2007-105 / NOAA-NF0805) sampled water properties, currents, and dispersal and transport of settlement-stage larvae in the VI and neighboring regions. This cruise was conducted between March 11, 2008 and March 24, 2008 aboard the *NOAA Ship Nancy Foster.* A plot of the final survey track is shown below in Figure 1. Specifically, the following operations were completed during this research cruise:

76 CTD casts (16 with LADCP)
51 bongo tows
40 MOCNESS tows
7 neuston tows
6 Lagrangian drifter deployments

Continuous measurements of sea surface temperature, salinity, and chlorophyll were collected over the course of the survey via the ship's flow-through system. Additionally, near-surface currents were continuously monitored using the vessel's hull-mounted ADCP.

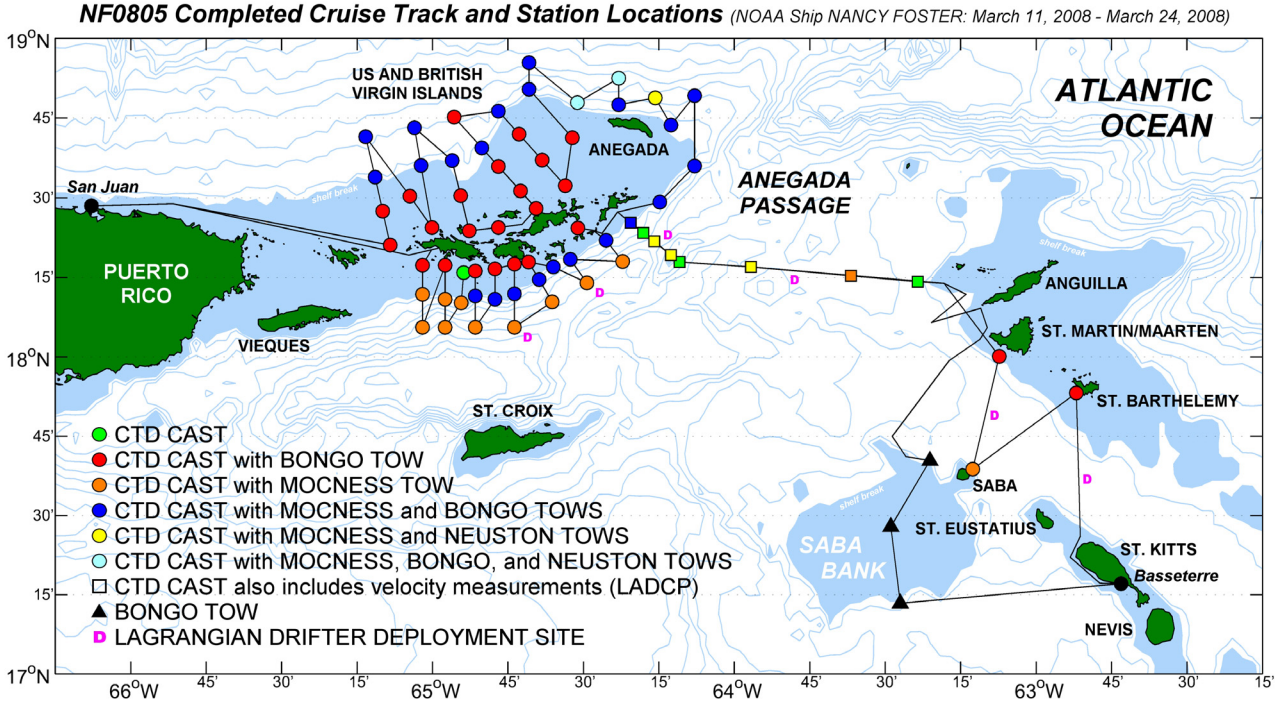

Figure 1.

SCHEDULE OF DATA DELIVERY:
Identification and analysis of biological samples and shipboard data analysis commenced immediately following the conclusion of the cruise and should be completed by mid 2009. All processed data (biological and oceanographic) collected during the cruise will be delivered to the U.S. Department of State within 18 months of the completion of the cruise (by September 24, 2009).