

**Application for Consent to Conduct Marine Scientific Research
in Areas Under National Jurisdiction of**

Bermuda, BVI, Canada, USA

***Please note we are also requesting a Canadian Foreign Fishing Vessel Licence
(our 2005 licence number was 000010)**

Date: 7 Nov 2006

1. General Information

1.1 Cruise name and/or number: C-211

1.2 Sponsoring institution:

Name: Sea Education Association

Address: P.O. Box 6, Woods Hole, MA 02543, U.S.A.

Name of Director: John Bullard

1.3 Scientist in charge of the project:

Name: Charles (Chuck) Lea, Ph.D.

Address: Sea Education Association, P.O. Box 6, Woods Hole, MA 02543, U.S.A.

Telephone: 508-540-3954

Telex: email clea@sea.edu

Telefax: 508-457-4673

1.4 Scientist(s) from Sea Education Association involved in the planning of the project:

Name(s): Paul Joyce, Ph.D. and Erik Zettler

Address: Sea Education Association, P.O. Box 6, Woods Hole, MA 02543, U.S.A.

1.5 Submitting officer:

Name and address: Erik Zettler, Science Coordinator

Country: U.S.A.

Telephone: 508-540-3954, ext. 29

Telex: email ezettler@sea.edu

Telefax: 508-457-4673

2. Description of Project (Attach additional pages as necessary)

2.1 Nature and objectives of project:

The primary purpose of our scientific research is to teach oceanography and oceanographic sampling techniques to college undergraduate students. Each student must design a research project ashore and carry out that research project during the cruise. In addition, some data is collected for long-term research projects carried out by staff scientists at the Sea Education Association. These projects include studies of the abundance and distribution of plankton, floating tar and plastic, the biology of thermal fronts, the geology of carbonate banks and islands, and the comparative ecology of shallow productive banks.

2.2 Relevant previous or future research cruises:

SEA has been training young oceanographers and working with Coastal States for almost 30 years in the Atlantic Ocean. Our vessels have routinely sailed through the waters claimed by nearly every coastal state in the Caribbean and Bahamian region, and we always secure permission to conduct oceanographic research from each of these countries before the cruises begin.

2.3 Previously published research data relating to the project:

The fact that we sail areas of the ocean not frequently covered by other research vessels has allowed us to contribute to the research of a number of outside investigators as vessels of opportunity, resulting in the publication of at least 36 articles on topics in physics, chemistry, geology, biology, meteorology, and pollution. In addition, SEA oceanographers occasionally publish results of data collected with student help. Four recent articles (including one by SEA oceanographer Paul Joyce) are cited below.

Joyce, P. 1998. Floating tar in the western North Atlantic and Caribbean Sea, 1982-1996. **Baseline** 36:167-171.

Lynch-Stieglitz, J., W.B. Curry, and N. Slowey. 1999. Weaker Gulf Stream in the Florida Straits during the last glacial maximum. **Nature** 402:644-648.

Podar, M., S.H.D Haddock, M. Sogin, and G.R. Harbison. 2001. A molecular phylogenetic framework for the phylum Ctenophora using 18S rRNA genes. **Molecular Phylogenetics and Evolution** 21:218-230.

Bower, A., E.R. Zettler, and G. Gawarkiewicz. 2004. Science under Sail. **Oceanography** 17:42-51.

3. Methods and Means to be Used

3.1 Particulars of the vessel:

Name: SSV Corwith Cramer

Nationality: U.S.A.

Operator: Sea Education Association

Owner: Sea Education Association

Overall length: 134 feet (41 m)

Maximum draught: 13 feet (3.9m)

Net tonnage: 47 tons

Gross tonnage: 158 tons

Propulsion: Cummins diesel 500 HP

Cruising speed: 5 knots

Maximum speed: 9 knots (engine)

Call sign: WTF 3319

Method and capability of communication (*including Telex, frequencies*):

Single sideband radio, VHF, Iridium phone/message

Name of master: Capt. Elizabeth Doxsee

Number of crew: 6

Number of scientists on board: 4

3.2 Aircraft or other craft to be used in the project:

One 15 foot (5 m) hard bottom inflatable boat with 25 HP outboard engine

3.3 Particulars of methods and scientific instruments:

Types of samples and data	Methods to be used	Instruments to be used
Temperature, salinity, nutrients	Chemical analyses	CTD, spectrophotometer, fluorometer, titration
plankton	Microscope counts	Plankton nets
Benthic organisms	Diversity and abundance	Small research otter trawl (5m opening)
sediments	Sieving, microscope observation	Sediment grab, gravity corer, rock dredge

3.4 Indicate whether harmful substances will be used:

None

3.5 Indicate whether drilling will be carried out:

None

3.6 Indicate whether explosives will be used:

None

4. Installations and Equipment

Details of installations and equipment (*dates of laying, servicing, recovery; exact locations and depth*):

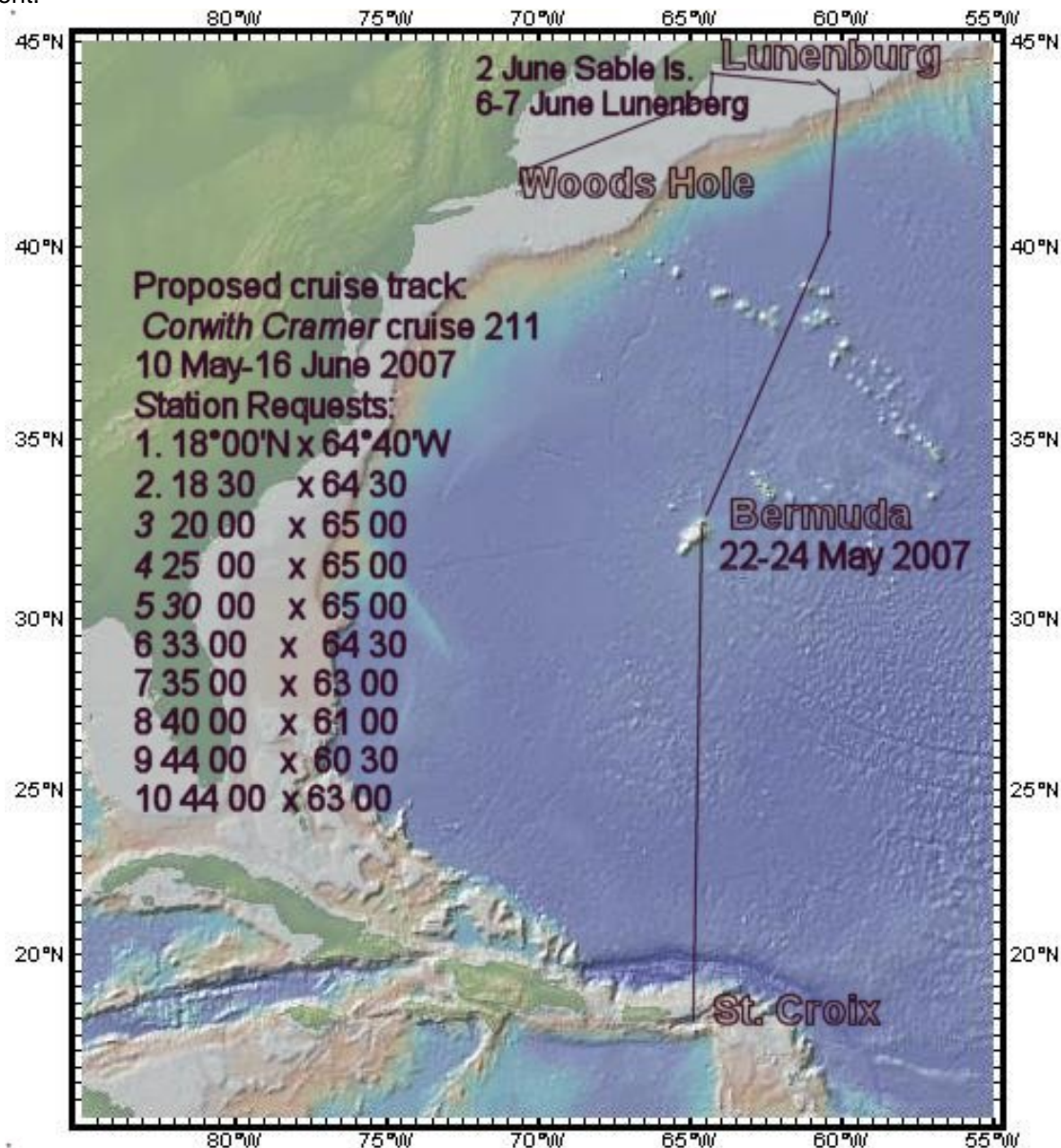
All equipment is deployed using our hydrographic winch, and remains attached to the vessel. No equipment will be installed.

5. Geographical Areas

5.1 Indicate geographical areas in which the project is to be conducted (*with reference in latitude and longitude*):

The cruise track will sail from St. Croix, USVI north toward Bermuda for a port stop, continuing north to Canadian waters for a stops at Sable Island (weather dependent) and Lunenburg then south end the cruise in Woods Hole, MA, USA (see attached chart). Anticipated stations are shown on the chart, however due to our educational mission, we seldom have exact locations where we need to sample. Generally samples are taken daily along the cruise track.

5.2 Attach chart(s) at an appropriate scale showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment.



6. Dates

6.1 Expected dates of first entry into and final departure from the research area of the research vessel:

Expected date of entry into the waters of BVI is 12 May 2007, Bermuda is 17 May 2007 and Canada is 30 May 2007. Entry and departure can vary since we are a sailing research vessel and thus our schedule is weather dependent. If requested, we can provide a progress report and a more detailed schedule for the vessel as the cruise progresses.

6.2 Indicate if multiple entry is expected:
no

7. Port Calls

7.1 Dates and names of intended ports of call in:

Depart:	St. Croix, USVI	10 May 2007
	St. Georges, Bermuda	22 -24 May 2007
	Sable Island, Canada*	2 June 2007
	(* weather dependent)	
	Lunenburg, Canada	6-7 June 2007
Arrive:	Woods Hole, MA, USA	16 June 2007

7.2 Any special logistical requirements at ports of call:
None; SEA vessels are self sufficient

7.3 Name/Address/Telephone of shipping agent (if available):
None; SEA generally does not use an agent.

8. Participation

8.1 Extent to which coastal states will be enabled to participate or to be represented in the research project:

SEA routinely cooperates with coastal states by offering one berth to a visiting scientist. Because of our educational mission, we prefer that the participant be a researcher or educator who can benefit from the experience and contribute their expertise to the students. SEA will pay all reasonable round-trip airfare expenses to the point of departure, with a return to home. SEA will also provide room and board to the participant during his/her time aboard, however we cannot provide a per diem or any other remuneration to the individual. Our schedules and cruise tracks are not flexible enough to allow for the vessel to make special port calls in order to pick up or drop off the observer.

Please note that because our ships are generally full we request that the participant be identified at least one month before the ship commences the cruise so that we can make travel and onboard arrangements.

8.2 Proposed dates and ports for embarkation/disembarkation:

9. Access to data, samples and research results

9.1 Expected dates of submission to U.S. State Department Research Vessel Clearance office of preliminary reports which should include the expected dates of submission of the final results:
30 days following end of cruise.

9.2 Proposed means for access by coastal states to data and samples:

SEA routinely provides a printed final cruise report for each coastal state that grants clearance. In addition, upon request, we can provide electronic data on CD-ROM.

9.3 Proposed means to provide coastal states with assessment of data, samples and research results or provide assistance in their assessment or interpretation:

SEA is happy to provide copies of any publications resulting from the work. We generally do not collect and archive samples, rather we use them during the cruise and then return them to the sea. Arrangements can be made with the Science Coordinator for samples to be kept if desired. The Science Coordinator is also available to help with data interpretation.

9.4 Proposed means of making results internationally available:

Some results are published in international scientific journals. Unpublished data can be made available by arrangement with the SEA archivist by contacting:

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