

# Atlantic Coast Environmental Indicators Consortium

## ACE-INC 0401 BT Cruise Report 25-26 March 2004

This report provides a summary of the research activities completed on the R/V Pisces during the ACE-INC 0401 Bottom Trawling (BT) cruise.

Research Vessel: R/V Aries

Area of Operations: Choptank River (25 March) Patuxent River (26 March)

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### Goals and Objectives:

The ACE INC programs goal is to develop integrative indicators of trophic structure and function that reflect changes in nutrient loading resulting from a changing landscape. Biota are proposed to be integrators of changing conditions in the Bay. Physical variability, both temporal and spatial, especially dissolved oxygen, is proposed to modulate trophic responses to nutrient over-enrichment. Phytoplankton, zooplankton, and fish responses are being analyzed to develop integrated indicators of Bay 'health.' We proposed that the structure of biotic communities will differ in the Patuxent and Choptank Rivers as a response to their differing trophic status. The Patuxent is 'recovering' from nutrient over-enrichment while the Choptank continues to receive high nutrient loading from agricultural inputs.

The specific objectives of the bottom trawling efforts on this cruise are to (1) characterize and compare the demersal fish community of each river as well as the pelagic community, (2) investigate the potential of demersal species as metrics of ecological status of each river and (3) include demersal species in the biomass spectra of each river. Many demersal fish species depend on the benthos for prey. This benthos-fish link could be best explained in future biomass size spectra analyses from samples collected with the bottom trawl.

### Cruise Activities:

A total of 7 stations were sampled on the Choptank River and 6 stations were sampled on the Patuxent River ([Figure 1](#)). Water temperature, dissolved oxygen, and salinity were taken using a handheld YSI meter prior to a 5-minute bottom trawl tow at each station ([Table 1](#)). Each 5-min bottom trawl was conducted to collect juvenile and adult demersal fish. The catches were processed to obtain data on species composition, sizes, and abundances.

**Problems:**

1. No CTD data, YSI handheld bottom and top measurements taken instead

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Table 1: Consecutive station log for ACE cruise 0401 BT.

### ACE 0401 BT Consecutive Station Log

RV Pisces

25-26 March 2004

STA	CTD	STA 2	LOCATION	TIME	DAY	DEPTH	LAT	LONG	CTD	BT	YSI
1	1	CHOP_MBW	Main Bay West	935	25	10	38.5696	-76.5002		X	X
2	2	CHOP_MBE	Main Bay East	1020	25	20.1	38.5682	-76.4428		X	X
3	3	CHOP_LR	Choptank River mouth	1113	25	8.8	38.6471	-76.3289		X	X
4	4	CHOP_LMR	Castle Haven Point	1156	25	7.3	38.6440	-76.1667		X	X
5	5	CHOP_MR	Chancellor's Point	1240	25	11.6	38.5743	-76.0267		X	X
6	6	CHOP_UMR	Blinkhorn Creek	1337	25	3.1	38.6576	-75.9553		X	X
7	7	CHOP_SF	Day Marker 52	1434	25	10	38.7286	-76.0141		X	X
8	8	PAX_LR	Pax River mouth	826	26	15.8	38.3075	-76.4363		X	X
9	9	PAX_LMR	St. Leonard Creek	917	26	1	38.3717	-76.4982		X	X
10	10	PAX_MR	Battle Creek	956	26	7.3	38.4293	-76.6085		X	X
11	11	PAX_UMR	Chalk Pt.	1045	26	3.9	38.5382	-76.6727		X	X
12	12	PAX_SF	Holland's Cliff	1120	26	5	38.6277	-76.6815		X	X
13	13	PAX_UR	Lower Marboro	1237	26	4.3	38.6635	-76.6887		X	X
<b>Total</b>									<b>0</b>	<b>13</b>	<b>13</b>

Field Codes:

**STA** - consecutive station number; **CTD** - CTD station number; **STA2** - secondary station identifier; **LOCATION** - geographic station location; **TIME** - arrival time; **DAY** - day of the month (July); **DEPTH** - station depth in meters; **LAT** - latitude; **LONG** - longitude.

Activity Codes:

**CTD** - Conductivity, Temperature and Depth datalogger; **BT** - 5 minute bottom trawl; **YSI** - handheld water property measurements (bottom and top readings)

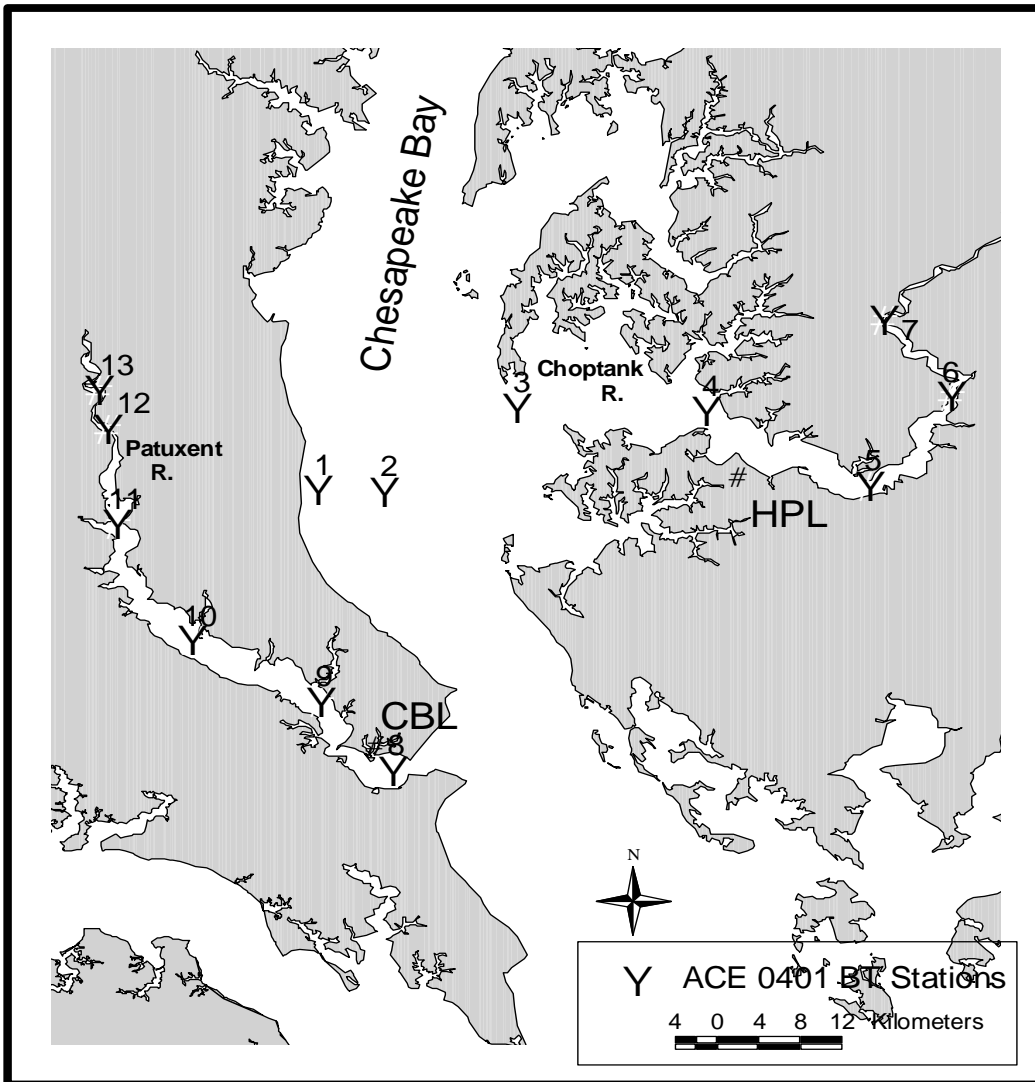


Figure 1: Map of ACE cruise 0401 BT sampling stations.