Consecutive station logs from 52 TRANSPORT Mapping cruises aboard the R/V Terrapin in the Choptank River from 2010-2012 (TRANSPORT project)

Website: https://www.bco-dmo.org/dataset/474291
Version: 1
Version Date: 2025-02-25

Project
» Integrating field methods and numerical models to quantify the links between larval transport, connectivity, and population dynamics (TRANSPORT)

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Dataset Description

Consecutive station logs from a series of one-day research cruises on the Choptank River (Chesapeake Bay, USA) during May to September of 2010 to 2012.

Methods & Sampling

Each cruise took place on the R/V Terrapin, a 26-ft Parker with a 275 mercury outboard equipped with a davit, operated by UMCES. On each cruise, several sampling stations were occupied. A CTD cast was made at each station, and the downcast was used to measure water properties. Using a hose attached to the CTD frame, bivalve larvae were collected from near bottom to the surface by moving the CTD up through the water column in 0.5 m depth intervals at regularly spaced time intervals (e.g., every 20 s or every 60 s) depending upon the depth of the station. The water was pumped into a 55-gallon drum half filled with water (to minimize damage to the samples) and through a 64 µm mesh net to collect bivalve larvae. Water samples were collected for chl-a pigment (using a syringe/filter apparatus) to calibrate the fluorometer and for total suspended solids (using a water bottle provided by Analytical Services).

Data Processing Description

BCO-DMO Processing:
- Modified parameter names;
- Replaced blanks (missing data) with 'nd' ('no data');
- Converted lat and lon from degrees and decimal minutes to decimal degrees.

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Data Files

File
station_logs.csv (Comma Separated Values (.csv), 387.68 KB) MD5:076175866c91918ea672c95e796807e0

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Parameters

Parameter	Description	Units
year	4-digit year.	YYYY
PDF_link_url	URL	unitless
PDF_link_text	text of the link	unitless
PDF_link	Link that opens the PDF file containing the original (scanned) station logs.	dimensionless
cruise_id	Cruise identification number.	dimensionless
station	Identification number of the sampling station.	dimensionless
month	Month (1-12) of year. Local time (EDT).	dimensionless
day	Day (1-31) of month. Local time (EDT).	dimensionless
time_local	Local time (EDT) as hours and minutes; 24-hour clock.	HHMM
depth	Sample depth.	meters
lat	Latitude of the sampling station.	decimal degrees
lon	Longitude of the sampling station.	decimal degrees
interval	B = Bottom; O = Oblique; P = Pycnocline; S = surface.	dimensionless
interval_range	Range of sampling depths.	meters

pump_duration	Duration (in hours and minutes) of pump operation.	HH:MM
vol_filt_pump1	Volume filtered pump 1.	gallons
vol_filt_pump2	Volume filtered pump 2.	gallons
CTD_num	CTD number.	dimensionless
secchi	Secchi depth.	meters
ISO_DateTime_Local	Date and time (in local EDT time zone) formatted to ISO 8601 standard. T indicates start of time string.	YYYY-mm-ddTHH:MM:SS.ss

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Deployments

BT-10-01

Website	https://www.bco-dmo.org/deployment/474446
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-01.doc
Start Date	2010-05-07
End Date	2010-05-07
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-02

Website	https://www.bco-dmo.org/deployment/474491
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-02.docx
Start Date	2010-05-20
End Date	2010-05-20
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-03

Website	https://www.bco-dmo.org/deployment/474509
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-03-3_ewn.docx
Start Date	2010-06-02
End Date	2010-06-02
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-04

Website	https://www.bco-dmo.org/deployment/474526
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-04.docx
Start Date	2010-06-08
End Date	2010-06-08
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-05

Website	https://www.bco-dmo.org/deployment/474543
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-05.docx
Start Date	2010-06-14
End Date	2010-06-14
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-06

Website	https://www.bco-dmo.org/deployment/474561
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-06.docx
Start Date	2010-06-18
End Date	2010-06-18
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-07

Website	https://www.bco-dmo.org/deployment/474579
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-07.docx
Start Date	2010-06-23
End Date	2010-06-23
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-08

Website	https://www.bco-dmo.org/deployment/474609
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-08.docx
Start Date	2010-06-29
End Date	2010-06-29
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-09

Website	https://www.bco-dmo.org/deployment/474620
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-09.docx
Start Date	2010-07-02
End Date	2010-07-02
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-10

Website	https://www.bco-dmo.org/deployment/474638
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-10.docx
Start Date	2010-07-06
End Date	2010-07-06
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-11

Website	https://www.bco-dmo.org/deployment/474694
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-11.docx
Start Date	2010-07-09
End Date	2010-07-09
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-12

Website	https://www.bco-dmo.org/deployment/474745
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-12.docx
Start Date	2010-07-12
End Date	2010-07-12
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-13

Website	https://www.bco-dmo.org/deployment/474776
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-13.docx
Start Date	2010-07-15
End Date	2010-07-15
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-14

Website	https://www.bco-dmo.org/deployment/474810
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-14.docx
Start Date	2010-07-20
End Date	2010-07-20
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-15

Website	https://www.bco-dmo.org/deployment/474840
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-15.docx
Start Date	2010-07-23
End Date	2010-07-23
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-16

Website	https://www.bco-dmo.org/deployment/474871
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-16.docx
Start Date	2010-07-27
End Date	2010-07-27
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-17

Website	https://www.bco-dmo.org/deployment/474902
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-17.docx
Start Date	2010-07-29
End Date	2010-07-29
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-18

Website	https://www.bco-dmo.org/deployment/474930
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-18.docx
Start Date	2010-08-02
End Date	2010-08-02
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-19

Website	https://www.bco-dmo.org/deployment/474960
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-19.docx
Start Date	2010-08-19
End Date	2010-08-19
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-10-20

Website	https://www.bco-dmo.org/deployment/474990
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2010cruise_reports/TRANSPORT_Cruise_Report_BT-10-20.docx
Start Date	2010-09-15
End Date	2010-09-15
Description	Part of a series of 20 one-day cruises that took place during the summer of 2010 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-01

Website	https://www.bco-dmo.org/deployment/475392
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-01.docx
Start Date	2011-05-25
End Date	2011-05-25
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-02

Website	https://www.bco-dmo.org/deployment/475407
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-02.docx
Start Date	2011-06-07
End Date	2011-06-07
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-03

Website	https://www.bco-dmo.org/deployment/475438
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-03.docx
Start Date	2011-06-17
End Date	2011-06-17
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-04

Website	https://www.bco-dmo.org/deployment/475468
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-04.docx
Start Date	2011-06-21
End Date	2011-06-21
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-05

Website	https://www.bco-dmo.org/deployment/475496
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-05.docx
Start Date	2011-06-28
End Date	2011-06-28
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-06

Website	https://www.bco-dmo.org/deployment/475524
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-06.docx
Start Date	2011-06-30
End Date	2011-06-30
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-07

Website	https://www.bco-dmo.org/deployment/475552
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-07.docx
Start Date	2011-07-06
End Date	2011-07-06
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-08

Website	https://www.bco-dmo.org/deployment/475569
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-08.docx
Start Date	2011-07-11
End Date	2011-07-11
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-09

Website	https://www.bco-dmo.org/deployment/475606
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-09.docx
Start Date	2011-07-21
End Date	2011-07-21
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-10

Website	https://www.bco-dmo.org/deployment/475635
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-10.docx
Start Date	2011-07-27
End Date	2011-07-27
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-11

Website	https://www.bco-dmo.org/deployment/475659
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-11.docx
Start Date	2011-08-02
End Date	2011-08-02
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-12

Website	https://www.bco-dmo.org/deployment/475683
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-12.docx
Start Date	2011-08-11
End Date	2011-08-11
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-13

Website	https://www.bco-dmo.org/deployment/475711
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-13.doc
Start Date	2011-08-17
End Date	2011-08-17
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-14

Website	https://www.bco-dmo.org/deployment/475739
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-14.doc
Start Date	2011-08-24
End Date	2011-08-24
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-15

Website	https://www.bco-dmo.org/deployment/475767
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-15.docx
Start Date	2011-08-31
End Date	2011-08-31
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-11-16

Website	https://www.bco-dmo.org/deployment/475798
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2011cruise_reports/TRANSPORT_Cruise_Report_BT-11-16.docx
Start Date	2011-09-08
End Date	2011-09-08
Description	Part of a series of 16 one-day cruises that took place during the summer of 2011 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-01

Website	https://www.bco-dmo.org/deployment/475858
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-01.doc
Start Date	2012-05-22
End Date	2012-05-22
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-02

Website	https://www.bco-dmo.org/deployment/475886
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-02.doc
Start Date	2012-05-30
End Date	2012-05-30
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-03

Website	https://www.bco-dmo.org/deployment/475917
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-03.doc
Start Date	2012-06-06
End Date	2012-06-06
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-04

Website	https://www.bco-dmo.org/deployment/475947
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-04.doc
Start Date	2012-06-08
End Date	2012-06-08
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-05

Website	https://www.bco-dmo.org/deployment/475976
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-05.doc
Start Date	2012-06-14
End Date	2012-06-14
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-06

Website	https://www.bco-dmo.org/deployment/476000
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-06.doc
Start Date	2012-06-19
End Date	2012-06-19
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-07

Website	https://www.bco-dmo.org/deployment/476030
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-07.doc
Start Date	2012-06-25
End Date	2012-06-25
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-08

Website	https://www.bco-dmo.org/deployment/476055
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-08.doc
Start Date	2012-07-05
End Date	2012-07-05
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-09

Website	https://www.bco-dmo.org/deployment/476083
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-09.docx
Start Date	2012-07-09
End Date	2012-07-09
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-10

Website	https://www.bco-dmo.org/deployment/476089
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-10.doc
Start Date	2012-07-18
End Date	2012-07-18
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-11

Website	https://www.bco-dmo.org/deployment/476100
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-11.doc
Start Date	2012-07-24
End Date	2012-07-24
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-12

Website	https://www.bco-dmo.org/deployment/476127
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-12.doc
Start Date	2012-07-31
End Date	2012-07-31
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-13

Website	https://www.bco-dmo.org/deployment/476155
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-13.doc
Start Date	2012-08-10
End Date	2012-08-10
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-14

Website	https://www.bco-dmo.org/deployment/476159
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-14.doc
Start Date	2012-08-13
End Date	2012-08-13
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-15

Website	https://www.bco-dmo.org/deployment/476187
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-15.doc
Start Date	2012-08-15
End Date	2012-08-15
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

BT-12-17

Website	https://www.bco-dmo.org/deployment/476209
Platform	R/V Terrapin
Report	http://dmoserv3.bco-dmo.org/data_docs/TRANSPORT/2012cruise_reports/TRANSPORT_Cruise_Report_BT-12-17.docx
Start Date	2012-09-27
End Date	2012-09-27
Description	Part of a series of 17 one-day cruises that took place during the summer of 2012 on the Choptank River (Chesapeake Bay, USA). "BT" = "Bivalve Transport" cruises; also called "Mapping Cruises".

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Project Information

Integrating field methods and numerical models to quantify the links between larval transport, connectivity, and population dynamics (TRANSPORT)

Website: http://northweb.hpl.umces.edu/TRANSPORT/home.htm

Additional information can be found at the TRANSPORT website:
http://northweb.hpl.umces.edu/TRANSPORT/home.htm

Project description:
This coupled field-and-modeling research project is designed to address fundamental, cutting-edge questions that will significantly enhance our understanding of physical-biological interactions in planktonic organisms and quantify how pelagic life stages influence population dynamics. Technological advances in field methodology and numerical modeling will be integrated and applied to investigate and compare how circulation patterns, larval transport, sub-population connectivity, and population dynamics of the Eastern oyster, *Crassostrea virginica*, respond to environmental variability and habitat alteration. This project will provide information that will significantly enhance the restoration and management of oysters.

Physical-biological interactions are an integral part of understanding fish, bivalve, and crustacean early-life history and the processes that affect inter-annual variability in their recruitment to reproducing populations. The combined modeling and field approach builds on existing state-of-the-art models, it applies a new technology that will significantly advance our ability to investigate in-situ bivalve larvae dynamics, and it will generate critical information about the early life of oysters (timing of spawning, larval behavior) that is necessary for enhancing our understanding and prediction of recruitment processes.

This research will also advance our understanding of population dynamics of organisms with a pelagic life stages by making quantitative links between larval transport and a full life-cycle model. In doing so, it will provide improved understanding of the inter-relationships between, and relative importance of, larval transport, the connectivity of different reef systems, and adult growth, mortality, and gamete production, and how these relationships are influenced by changes in physical conditions and habitat.

Although focused on the oyster, *Crassostrea virginica*, the ecological studies and comparisons will result in a significant enhancement in our understanding of the interactions between physical conditions and a suite of bivalve species. This program will benefit society by providing new insights and understanding that will enhance fisheries management capabilities. The numerical tools developed will have the resolution appropriate for helping to guide oyster restoration programs, locate optimal sanctuaries (i.e., marine protected areas), and inform spatial management of oyster harvest. Although the quantitative tools and information generated will directly support oyster management and restoration activities of state and federal partners in Chesapeake Bay, the findings and tools developed in this project will be applicable to many other systems where bivalves comprise an important component of commercial and recreational fisheries. A PhD graduate student will be trained in field and numerical modeling research in this coupled field-and-modeling program. In addition to gaining a solid foundation in a cutting-edge field, the student will have the opportunity to develop science communication skills and interact with management agency representatives.

Publications Produced as a Result of this Research:

Gallego, A., E.W. North and E.D. Houde. 2012. Understanding and quantifying mortality in pelagic, early life stages of marine organisms — Old challenges and new perspectives. Journal of Marine Systems 93: 1-3.

Goodwin, J. D., and E.W. North. In prep. Identifying factors that influence the swimming behavior of *Crassostrea virginica* larvae in Choptank River and calculating their mortality.

Goodwin, J. D., E. W. North, and C. M. Thompson. 2014. Evaluating and improving a semi-automated image analysis technique for identifying bivalve larvae. Limnology and Oceanography: Methods 12: 548-562. DOI: 10.4319/lom.2014.12.548

Goodwin, J. D., E. W. North, and V. S. Kennedy. 2016. Identification of eastern oyster *Crassostrea virginica* larvae using polarized light microscopy in a mesohaline region of Chesapeake Bay. Journal of Shellfish Research 35(1): 157-168.

Goodwin, J. D., E. W. North, C. M. Thompson, I. Mitchell and H.M McFadden. In press. Improving a semi-automated classification technique for bivalve larvae: automated image acquisition and measures of quality control. Limnology and Oceanography: Methods.

North, E. W., D. M. King, J. Xu, R. R. Hood, R. I. E. Newell, K. T. Paynter, M. L. Kellogg, M. K. Liddel, and D. F. Boesch. 2010. Linking optimization and ecological models in a decision support tool for oyster restoration and management. Ecological Applications 20(3): 851–866.

Spires, J. E., E. W. North, and W. Long. In prep. The influence of salinity-induced mortality on larval transport between eastern oyster (*Crassostrea virginica*) reefs in an oligohaline estuary: model simulations and implications for restoration. Estuaries and Coasts.

Thompson, C. M., E. W. North, V. S. Kennedy, and S. N. White. 2015. Classifying bivalve larvae using shell pigments identified by Raman spectra. Analytical and Bioanalytical Chemistry 407:3591-3604, DOI 10.1007/s00216-015-8575-8

Thompson, C.M., E.W. North, S.N. White, and S.M. Gallager. 2014. An analysis of bivalve larval shell pigments using micro-Raman spectroscopy. Journal of Raman Spectroscopy 45(5):349-358

Dissertations and Theses:

Goodwin, J. D. 2015. Integrating automated imaging and a novel identification technique to estimate mortality and factors that determine the vertical distribution of *Crassostrea virginica* larvae. Ph.D. Dissertation. University of Maryland College Park and the University of Maryland Center for Environmental Science.

Spires, J. E. The exchange of eastern oyster (*Crassostrea virginica*) larvae between subpopulations in the Chotpank and Little Choptank Rivers: model simulations, the influence of salinity, and implications for restoration. Master of Science Thesis, University of Maryland College Park and Center for Environmental

Science, 79 pp.

Books and One-Time Proceedings:

Anthony, Z. 2014. Optimal microscope and camera settings for counting and identifying copepods (*Acartia tonsa*) using a newly developed semi-automated image analysis technology. Undergraduate Research Report. 14 pp.

Hinson, K. I., E.W. North, and C.M. Thompson. 2011. New technologies to support shellfish restoration. Research Experience for Undergraduates (REU) final report.

Mitchell, I. 2013. Updates in LTRANS v.2b. University of Maryland Center for Environmental Science, Horn Point Laboratory. Cambridge, MD. 2 pp.

North, E. W. 2010. Q&A: Elizabeth North. 10/01/2009-09/30/2010, ICES Insight, September 2010, vol. 47, p. 43-44.

Schlag, Z. R., and E. W. North. 2012. Lagrangian TRANSport model (LTRANS v.2) User's Guide. University of Maryland Center for Environmental Science, Horn Point Laboratory. Cambridge, MD. 183 pp.

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Funding

Funding Source	Award
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