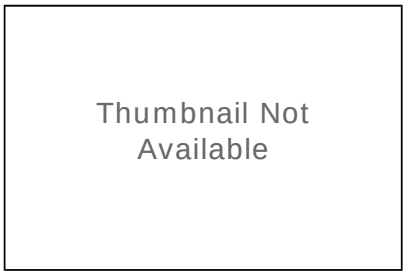
Delaware Biological Stream Monitoring Program



Tags

WADEABLE STREAMS, Habitat, Watersheds, Streams, BENTHOS, WATER QUALITY, biota, environment, Biology, Ecology, Ecosystem, Environment, Indicator, Marine, Monitoring, Quality, Surface Water, Water, Benthos, Macro Invertebrates, Water Quality, Wateshed

Summary

The purpose of the Ambient Surface Water Quality Monitoring Program is to collect data on the chemical, physical and biological characteristics of Delaware's surface waters. The information that is collected under this Program is used to: describe general water quality conditions in the State; Identify long term trends in water quality; determine the suitability of Delaware waters for water supply, recreation, fish and aquatic life, and other uses; monitor achievement of water quality standards; Identify and prioritize high quality and degraded waters; Support Total Maximum Daily Load Program; and Evaluate the overall success of Delaware's water quality management efforts. There are five major components to Delaware's Surface Water Quality Monitoring Program: General Assessment Monitoring, TMDL-Related Monitoring, biological Assessment Monitoring,Toxics in Biota Monitoring, Toxics in Sediment Monitoring.

Description

A long-term project is in progress to collect biological and habitat data from nontidal wadable streams in order to relate water quality conditions with biological integrity. Eligible stations must (1) be completely nontidal, (2) have perennial flow, and (3) be uninfluenced by elevated temperature resulting from lentic discharge (i.e. millpond, stormwater pond, etc). The biological data consists of two instream matrices: macroinvertebrate, and periphyton (first initiated in spring - 2005). The habitat data consists of instream and riparian zone matrices. Beginning in 2006 and every other autumn thereafter, biological (macroinvertebrate), habitat and chemical sampling will occur under baseflow conditions at 50 stations located along streams that have been placed on the 303(d) list due to impaired biology or habitat. This bi-annual sampling will rotate by county, major basin, or both. In the fall of 2006, the Piedmont major basin is targeted. Conjunctional chemical sampling will be conducted. The data will be evaluated to determine whether any form of impairment still exists at each respective station. If impairment is concluded, then effort will be made to identify the cause/s. The procedure for identifying causation is not yet fully outlined but will likely follow the EPA Stressor Identification Guidance Document (USEPA, 2000). In years between 303(d) sampling up to 50 GAMN stations will be sampled. The biological and habitat methodology will be the same as used for the 303(d) sampling. This general evaluation effort will include the periphyton sampling introduced previously. The immediate objective of this sampling is to determine the overall biological condition of nontidal streams in Delaware. The extended objective is to identify trends in biological condition in these waters. Biology and habitat sampling that occurs in the Middle Atlantic Coastal Plain Ecoregion, which accounts for 90 % of Delaware and includes all of three major basins (Delaware Bay, Chesapeake Bay, Inland Bays) will be done in accordance with methods defined in USEPA (1997). Biology samples will be collected at coastal plain sites using a D-framed net. Biology and habitat sampling that occurs in the Northern Piedmont Ecoregion, a relatively small area located in the northern most part of Delaware and representing the remaining 10 % of the State will be conducted according to methods defined in Rapid Bioassessment Protocols for use in Wadable Streams and Rivers (EPA 841-B-99-002). Biology samples will be collected at Piedmont sites using a kick net. Periphyton sampling will be conducted according to the USGS, National Water Quality Assessment Program (Moulton et al. 2002). Samples will be collected from natural substrates, sticks and/or macrophytes (coastal plain), and rocks (piedmont). Only sticks that have obviously been in the water for an extended period (weeks to months) will be sampled.

Credits

There are no credits for this item.

Use limitations
Use at your own risk

ArcGIS Metadata ►

Citation ►

TITLE Delaware Biological Stream Monitoring Program

Hide Citation ▲

Resource Details ►

CREDITS

Hide Resource Details ▲

Resource Constraints ►

CONSTRAINTS
LIMITATIONS OF USE
Use at your own risk

Hide Resource Constraints ▲

Metadata Details ►

* LAST UPDATE 2011-12-21

ARCGIS METADATA PROPERTIES
METADATA FORMAT ESRI-ISO

CREATED IN ARCGIS 2010-03-30T13:19:05
LAST MODIFIED IN ARCGIS 2011-12-21T09:54:25

AUTOMATIC UPDATES
HAVE BEEN PERFORMED No

Hide Metadata Details ▲

FGDC Metadata (read-only) ►

Identification ►

CITATION
CITATION INFORMATION
ORIGINATOR Delaware Department of Natural Resources and Environmental Control
ORIGINATOR Division of Water Resources
ORIGINATOR Watershed Assessment Section
PUBLICATION DATE 2013-04-24
TITLE

Delaware Biological Stream Monitoring Program

PUBLICATION INFORMATION

PUBLICATION PLACE Annapolis, MD

PUBLISHER Chesapeake Bay Program (CBP)

ONLINE LINKAGE http://data.chesapeakebay.net/?DB=CBP_NTBENDB

ONLINE LINKAGE

http://www.chesapeakebay.net/data/downloads/watershed_wide_benthic_invertebrate_database

ONLINE LINKAGE http://www.wr.dnrec.delaware.gov/Services/Pages/WatershedAssessment.aspx

DESCRIPTION

ABSTRACT

A long-term project is in progress to collect biological and habitat data from nontidal wadable streams in order to relate water quality conditions with biological integrity. Eligible stations must (1) be completely nontidal, (2) have perennial flow, and (3) be uninfluenced by elevated temperature resulting from lentic discharge (i.e. millpond, stormwater pond, etc). The biological data consists of two instream matrices: macroinvertebrate, and periphyton (first initiated in spring - 2005). The habitat data consists of instream and riparian zone matrices. Beginning in 2006 and every other autumn thereafter, biological (macroinvertebrate), habitat and chemical sampling will occur under baseflow conditions at 50 stations located along streams that have been placed on the 303(d) list due to impaired biology or habitat. This bi-annual sampling will rotate by county, major basin, or both. In the fall of 2006, the Piedmont major basin is targeted. Conjunctional chemical sampling will be conducted. The data will be evaluated to determine whether any form of impairment still exists at each respective station. If impairment is concluded, then effort will be made to identify the cause/s. The procedure for identifying causation is not yet fully outlined but will likely follow the EPA Stressor Identification Guidance Document (USEPA, 2000).

In years between 303(d) sampling up to 50 GAMN stations will be sampled. The biological and habitat methodology will be the same as used for the 303(d) sampling. This general evaluation effort will include the periphyton sampling introduced previously. The immediate objective of this sampling is to determine the overall biological condition of nontidal streams in Delaware. The extended objective is to identify trends in biological condition in these waters. Biology and habitat sampling that occurs in the Middle Atlantic Coastal Plain Ecoregion, which accounts for 90 % of Delaware and includes all of three major basins (Delaware Bay, Chesapeake Bay, Inland Bays) will be done in accordance with methods defined in USEPA (1997).

Biology samples will be collected at coastal plain sites using a D-framed net. Biology and habitat sampling that occurs in the Northern Piedmont Ecoregion, a relatively small area located in the northern most part of Delaware and representing the remaining 10 % of the State will be conducted according to methods defined in Rapid Bioassessment Protocols for use in Wadable Streams and Rivers (EPA 841-B-99-002). Biology samples will be collected at Piedmont sites using a kick net. Periphyton sampling will be conducted according to the USGS, National Water Quality Assessment Program (Moulton et al. 2002). Samples will be collected from natural substrates, sticks and/or macrophytes (coastal plain), and rocks (piedmont). Only sticks that have obviously been in the water for an extended period (weeks to months) will be sampled.

PURPOSE

The purpose of the Ambient Surface Water Quality Monitoring Program is to collect data on the chemical, physical and biological characteristics of Delaware's surface waters. The information that is collected under this Program is used to: describe general water quality conditions in the State; Identify long term trends in water quality; determine the suitability of Delaware waters for water supply, recreation, fish and aquatic life, and other uses; monitor achievement of water quality standards; Identify and prioritize high quality and degraded waters; Support Total Maximum Daily Load Program; and Evaluate the overall success of Delaware's water quality management efforts. There are five major components to Delaware's Surface Water Quality Monitoring Program: General Assessment Monitoring, TMDL-Related Monitoring, biological Assessment Monitoring,Toxics in Biota Monitoring, Toxics in Sediment Monitoring.

TIME PERIOD OF CONTENT
TIME PERIOD INFORMATION
SINGLE DATE/TIME
CALENDAR DATE 20000320-Present
CURRENTNESS REFERENCE
Ground condition

STATUS
PROGRESS In work
MAINTENANCE AND UPDATE FREQUENCY Annually

SPATIAL DOMAIN
BOUNDING COORDINATES
WEST BOUNDING COORDINATE -75.7609
EAST BOUNDING COORDINATE -75.43456
NORTH BOUNDING COORDINATE 39.376167
SOUTH BOUNDING COORDINATE 38.497295

KEYWORDS
THEME
THEME KEYWORD THESAURUS None
THEME KEYWORD WADEABLE STREAMS
THEME KEYWORD Habitat
THEME KEYWORD Watersheds
THEME KEYWORD Streams
THEME KEYWORD BENTHOS
THEME KEYWORD WATER QUALITY

THEME
THEME KEYWORD THESAURUS ISO 19115 Topic Category
THEME KEYWORD biota
THEME KEYWORD environment

THEME
THEME KEYWORD THESAURUS EPA GIS Keyword Thesaurus
THEME KEYWORD Biology
THEME KEYWORD Ecology
THEME KEYWORD Ecosystem
THEME KEYWORD Environment
THEME KEYWORD Indicator
THEME KEYWORD Marine
THEME KEYWORD Monitoring
THEME KEYWORD Quality
THEME KEYWORD Surface Water
THEME KEYWORD Water

THEME
THEME KEYWORD THESAURUS User
THEME KEYWORD Benthos
THEME KEYWORD Macro Invertebrates
THEME KEYWORD Water Quality
THEME KEYWORD Wateshed

PLACE
PLACE KEYWORD THESAURUS None
PLACE KEYWORD Chesapeake Bay
PLACE KEYWORD Delaware

ACCESS CONSTRAINTS
None

USE CONSTRAINTS
Use at your own risk

POINT OF CONTACT
CONTACT INFORMATION
CONTACT PERSON PRIMARY
CONTACT PERSON Ellen Dickey
CONTACT ORGANIZATION Delaware Department of Natural Resources and Environmental Control
CONTACT POSITION Data Manager
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SECURITY INFORMATION
SECURITY CLASSIFICATION SYSTEM FIPS Pub 199
SECURITY CLASSIFICATION No Confidentiality
SECURITY HANDLING DESCRIPTION Standard Technical Controls

Hide Identification ▲

Data Quality ►

LOGICAL CONSISTENCY REPORT
Not Applicable

COMPLETENESS REPORT
Unknown

POSITIONAL ACCURACY
HORIZONTAL POSITIONAL ACCURACY
HORIZONTAL POSITIONAL ACCURACY REPORT
Data were collected using methods that are accurate to within 6-25 meters (EPA National Geospatial Data Policy [NGDP] Accuracy Tier 3). For more information, please see EPA's NGDP at http://epa.gov/geospatial/policies.html

LINEAGE
PROCESS STEP
PROCESS DESCRIPTION
Metadata imported.

PROCESS DATE 2010-03-30

PROCESS STEP
PROCESS DESCRIPTION
Data for Chesapeake Bay Region was extracted from National Dataset and loaded into the CBPO Non-Tidal Benthic Data base.

PROCESS DATE 2010-03-30

PROCESS STEP
PROCESS DESCRIPTION
2008-2010 Data for Chesapeake Bay Region was extracted from provided and loaded into the CBPO Non-Tidal Benthic Data base.

PROCESS DATE 2011-12-31

Hide Data Quality ▲

Spatial Reference ►

HORIZONTAL COORDINATE SYSTEM DEFINITION
GEOGRAPHIC
LATITUDE RESOLUTION 0.000001
LONGITUDE RESOLUTION 0.000001
GEOGRAPHIC COORDINATE UNITS Decimal degrees

GEODETIC MODEL
HORIZONTAL DATUM NAME North American Datum of 1983
ELLIPSOID NAME Geodetic Reference System 1980
SEMI-MAJOR AXIS 6378137.000000
DENOMINATOR OF FLATTENING RATIO 298.257222

Hide Spatial Reference ▲

Distribution Information ►

DISTRIBUTOR
CONTACT INFORMATION
CONTACT PERSON PRIMARY
CONTACT PERSON Ellen Dickey
CONTACT ORGANIZATION Delaware Department of Natural Resources and Environmental Control
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unavailavle

RESOURCE DESCRIPTION Downloadable Data
DISTRIBUTION LIABILITY
I, the data requestor, agree to acknowledge the Chesapeake Bay Program and any other

agencies and institutions as specified by the Chesapeake Bay Program Office as data providers. I agree to credit the data originators in any publications,reports or presentations generated from this data. I also accept that, although these data have been processed successfully on a computer system at the Chesapeake Bay Program, no warranty expressed or implied is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes, nor shall the act ofdistribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data. It is strongly recommended that careful attention be paid to the contents of the data documentation file associated with these data. The Chesapeake Bay Program shall not be held liable for improper or incorrect use of the data described and/or contained herein.

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Metadata Reference ►

METADATA DATE 2013-04-24

METADATA FUTURE REVIEW DATE 2017-04-24

METADATA CONTACT

CONTACT INFORMATION

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CONTACT POSITION Monitoring Coordinator

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http://www.chesapeakebay.net

METADATA STANDARD NAME NBII Content Standard for National Biological Information Infrastructure Metadata

METADATA STANDARD VERSION FGDC-STD-001-1998

METADATA SECURITY INFORMATION

METADATA SECURITY CLASSIFICATION SYSTEM None

METADATA SECURITY CLASSIFICATION Unclassified

METADATA SECURITY HANDLING DESCRIPTION

None

Hide Metadata Reference ▲