Acidification Monitoring Point Data Compilation in the Mid-Atlantic Region, Version October 2023

Identification_Information:
Citation:
Citation_Information:
Publication_Date: 20231017
Title: Acidification Monitoring Point Data Compilation in the Mid-Atlantic Region, Version October 2023
Geospatial_Data_Presentation_Form: vector digital data
Description:
Abstract:
These data comprise the locations and methods of ocean and coastal acidification monitoring in the Mid-Atlantic. The data come from a variety of publicly available sources including state governments and academic institutions, as well as from a 2022 MACAN survey of the Coastal and Ocean Acidification (COA) monitoring community. This map is regularly updated as additional information about monitoring sites continues to emerge and develop. If you have additional information that you think should be included in this map, please contact info@MidACAN.org.

Purpose:
This data is meant to compile information about the sites that monitor acidification to assist in the development of a robust monitoring network in the Mid-Atlantic as per the goals of the Mid-Atlantic Coastal Acidification Network (MACAN) and the Mid-Atlantic Regional Planning Body in the Mid-Atlantic Regional Ocean Action Plan. This map does not compile the monitoring data itself, but does link to the monitoring data when it is publicly available.
This compilation is version October 2023, and is presented in the MARCO Mid-Atlantic Ocean Data Portal (portal.midatlanticocean.org).

Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 20231017
Currentness_Reference: the MARCO region
Status:
Progress: In work
Maintenance_and_Update_Frequency: Continually
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -95.000700
East_Bounding_Coordinate: -60.270000
North_Bounding_Coordinate: 45.010000
South_Bounding_Coordinate: 25.188000

Keywords:
Theme:
Theme_Keyword_Thesaurus: ISO 19115 Topic Categories
Theme_Keyword: climatologyMeteorologyAtmosphere
Theme_Keyword: environment
Theme_Keyword: geoscientificInformation
Theme_Keyword: oceans
Theme_Keyword: planningCadastre
Theme:
Theme_Keyword_Thesaurus: None
Theme_Keyword: ocean
Theme_Keyword: coastal
Theme_Keyword: estuarine
Theme_Keyword: acidification
Theme_Keyword: planning
Theme_Keyword: mid-atlantic
Theme_Keyword: monitoring
Theme_Keyword: pH
Theme_Keyword: DIC
Theme_Keyword: TA
Theme_Keyword: CO2
Theme_Keyword: MARCO
Theme_Keyword: Virginia
Theme_Keyword: Maryland
Theme_Keyword: Delaware
Theme_Keyword: New Jersey
Theme_Keyword: New York
Access_Constraints: None
Use_Constraints:
All data are provided as is and no warranty is made as to the currency, completeness, accuracy, or utility of any specific data. Please read all metadata documentation for information about the data, including descriptions, purpose, contacts, use and citations/sources.

Contact_Organization:
MACAN, University of Virginia
Contact_Person: Carly K. LaRoche
Contact_Position: Compiler of source OCA data, MACAN Fellow and Graduate Student Researcher
Contact_Electronic_Mail_Address: ckl6be@virginia.edu

Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Virginia Coastal Zone Management Program

Contact_Person: Nick Meade
Contact_Position: GIS Coordinator
Contact_Address:
Address_Type: mailing and physical
Address: 1111 E. Main Street
City: Richmond
State_or_Province: Virginia
Postal_Code: 23219
Country: US
Contact_Voice_Telephone: 804-698-4297
Contact_Electronic_Mail_Address: nick.meade@deq.virginia.gov
Data_Set_Credit:
Mid-Atlantic Regional Council on the Ocean Center for Ocean Observing Leadership, Rutgers University Virginia Coastal Zone Management Program

Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Mid-Atlantic Coastal Acidification Network
Contact_Person: Kirstin Wakefield
Contact_Position: MACAN Co-coordinator
Contact_Electronic_Mail_Address: kirstin@maracoos.org

Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Mid-Atlantic Coastal Acidification Network
Contact_Person: Janet Reimer
Contact_Position: MACAN Co-coordinator
Contact_Electronic_Mail_Address: jreimer@midatlanticocean.org

Native_Data_Set_Environment:
Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.6.1.9270

Data_Quality_Information:
Lineage:
Source_Information:
Type_of_Source_Media: onLine
Source_Contribution:
Data was/is provided by sources in a variety of formats including KML, Microsoft Word, Microsoft Excel, and CSV files containing lat/long locations of monitoring sites and supplemental information, as well as ESRI point shapefile and geodatabase feature class data.

Process_Step:
Process_Description:
A new ESRI geodatabase feature class was created with attribute fields decided on by the project team. Datasets provided in text and tabular file formats were added to ArcMap using the 'Make XY Event Layer' tool and then exported to a new point shapefile. Data from each shapefile was then loaded into the project geodatabase feature class. Data provided in ESRI shapefile or geodatabase feature class format were loaded directly into the project geodatabase. Where possible attributes were loaded from matching source fields in the input data and all remaining attribute fields were populated using the 'Field Calculator' function.
Process_Date: 20170430
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Virginia Coastal Zone Management Program
Contact_Person: Nick Meade
Contact_Position: GIS Coordinator
Contact_Address:
Address_Type: mailing and physical
Address: 629 East Main Street
City: Richmond
State_or_Province: Virginia
Postal_Code: 23218
Country: US
Contact_Voice_Telephone: 804-698-4297
Contact_Electronic_Mail_Address: nick.meade@deq.virginia.gov

Process_Step:
Process_Description:
Dataset updated/appended with records provided in Excel and text format.
Process_Date: 20180612
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization:
Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA), Rutgers University
Contact_Person: John A. Bognar
Contact_Position: GIS Coordinator
Contact_Address:
Address_Type: mailing and physical
Address: 14 College Farm Road
City: New Brunswick
State_or_Province: New Jersey
Postal_Code: 08901-8551
Country: US

Contact_Voice_Telephone: 848-932-1582
Contact_Electronic_Mail_Address: johnb@crssa.rutgers.edu

Process_Step:
Process_Description:
Dataset updated/appended with ocean acidification monitoring points. Point data in KML format were converted to geodatabase feature classes and attributes prepared, and points merged into the previous acidification dataset. The number of overlapping points at each location was generated and added as a new field in the data. All GIS processing was in ESRI ArcGIS Desktop 10.6.*.
Process_Date: 20190201
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization:
Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA), Rutgers University
Contact_Person: John A. Bognar
Contact_Position: GIS Coordinator
Contact_Address:
Address_Type: mailing and physical
Address: 14 College Farm Road
City: New Brunswick
State_or_Province: New Jersey
Postal_Code: 08901-8551
Country: US
Contact_Voice_Telephone: 848-932-1582
Contact_Electronic_Mail_Address: johnb@crssa.rutgers.edu

Process_Step:
Process_Description:
OA tabular data, version October 2023, were compiled and processed by Carly LaRoche (UVA) in CSV format. These data were converted by the MARCO Portal to GIS format using the latitude and longitude coordinates in the tabular data. The resultant ArcGIS geodatabase point feature classes representing the OA data inventory and glider points were merged into a single point feature class; the number of overlapping points at each location were then calculated to a new data attribute in GIS. In preparation for integration on the Mid-Atlantic Ocean Data Portal, the GIS point feature class was projected to the Web Mercator (Auxiliary Sphere) map projection, then the various cartographic representations were prepared and published to web map services on the MARCO Portal server. All GIS processing was in ESRI ArcGIS Desktop 10.8.x, ArcPro 3.0.x.
Process_Date: 202310
Process_Contact:
Contact_Information:
Contact_Organization_Primary:

Contact_Organization: MACAN, University of Virginia
Contact_Person: Carly K. LaRoche
Contact_Position: MACAN Fellow and Graduate Student Researcher
Contact_Electronic_Mail_Address: ckl6be@virginia.edu

Contact_Organization:
Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA), Rutgers University
Contact_Person: John A. Bognar
Contact_Position: GIS Coordinator
Contact_Address:
Address_Type: mailing and physical
Address: 14 College Farm Road
City: New Brunswick
State_or_Province: New Jersey
Postal_Code: 08901-8551
Country: US
Contact_Voice_Telephone: 848-932-1582
Contact_Electronic_Mail_Address: johnb@crssa.rutgers.edu

Spatial_Data_Organization_Information:
Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Entity point
Point_and_Vector_Object_Count: 42123

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution: 8.983152841195215e-09
Longitude_Resolution: 8.983152841195215e-09
Geographic_Coordinate_Units: Decimal Degrees
Geodetic_Model:
Horizontal_Datum_Name: D WGS 1984
Ellipsoid_Name: WGS 1984
Semi-major_Axis: 6378137.0
Denominator_of_Flattening_Ratio: 298.257223563

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label: AcidificationMonitoringPts_MidA_ver201902
Attribute:

Attribute_Label: GeoID
Attribute_Definition: Internal feature number.
Attribute_Definition_Source: Esri
Attribute_Domain_Values:
Unrepresentable_Domain:
Sequential unique whole numbers that are automatically generated.

Attribute:
Attribute_Label: SHAPE
Attribute_Definition: Feature geometry.
Attribute_Definition_Source: Esri
Attribute_Domain_Values:
Unrepresentable_Domain: Coordinates defining the features.

Attribute:
Attribute_Label: pH
Attribute_Definition:
Indicates if pH is/was sampled at this site. “Yes” defines sites at which pH is/was collected. “No” defines sites at which pH is/was not collected.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: DIC
Attribute_Definition:
Indicates if dissolved inorganic carbon (DIC) is/was sampled at this site. “Yes” defines sites at which DIC is/was collected. “No” defines sites at which DIC is/was not collected.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: TA
Attribute_Definition:
Indicates if total alkalinity (TA) is/was sampled at this site. “Yes” defines sites at which TA is/was collected. “No” defines sites at which TA is/was not collected.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: pCO2
Attribute_Definition:
Indicates if partial carbon dioxide (pCO2) is/was sampled at this site. “Yes” defines sites at which pCO2 is/was collected. “No” defines sites at which pCO2 is/was not collected.
Attribute_Definition_Source: MARCO
Attribute:

Attribute_Label: Other Parameters

Attribute_Definition:
Indicates other water quality parameters that are measured at this monitoring site. Other parameters can include, but are not limited to, temperature, specific conductivity, salinity, dissolved oxygen concentration, dissolved oxygen percent saturation, turbidity, depth, etc.
Attribute_Definition_Source: MARCO
Attribute:

Attribute_Label: Temporal Extent
Attribute_Definition:
Indicates the timeframe during which this site was active. For example, a timeframe of 2012-present defines the monitoring period as beginning in 2012 and ongoing.
Attribute_Definition_Source: MARCO
Attribute:

Attribute_Label: Sampling Frequency
Attribute_Definition:
Indicates the frequency at which samples are taken at the site with either continuous and/or discrete methods. For example, a sampling frequency of “Continuous: 15 minutes; Discrete: NULL” defines the continuous monitoring as occurring every 15 minutes with no discrete methods in use.
Attribute_Definition_Source: MARCO
Attribute:

Attribute_Label: Station Name
Attribute_Definition: Indicates the name of the monitoring site.
Attribute_Definition_Source: MARCO
Attribute:

Attribute_Label: Institution
Attribute_Definition: Indicates the primary institution that conducts monitoring at the site
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Website
Attribute_Definition: Indicates the website where the monitoring data from the site can be found if it is public.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Collection Type
Attribute_Definition:
Indicates the manner in which sampling is conducted at this site. There are 4 major categories of collection type including “Continuous”, “Discrete”, “Cruise”, and “Glider”. Continuous monitoring depicts a site that is continuously sampling parameters, often a moored station with

technology that is measuring water samples at a regular and frequent interval without human effort. A Discrete monitoring site is a location at which regular field sampling is presently conducted by an individual or individuals. Glider data refers to deployments of autonomous underwater vehicles that have the capacity to collect high frequency data. Cruise defines monitoring data collected by a survey vessel as part of a research cruise or a ship of opportunity. Some Cruise sites may have additional information, indicating if the cruise was collecting discrete data or underway data, which is a form of continuous data collection that occurs as a vessel is in transit.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Number of Carbonate System Parameters Measured
Attribute_Definition: Number of monitoring types, 1-4 (pH, DIC, TA, pCO2)

Attribute:
Attribute_Label: Carbonate System Parameters Measured
Attribute_Definition: List of carbonate system parameters measured at site (pH, DIC, TA, pCO2)
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Collection Depth
Attribute_Definition: Indicates the depth of measurement in the water column. Four types of collection depth are represented: Profile, Surface, Bottom, and Surface and Bottom.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Sensor/Station Status (as of Summer 2023)
Attribute_Definition: The attribute defines sites by the status of the sensor and/or station as Active, Inactive, or Project-Based Deployment. Active sites are where monitoring was still ongoing as of the 2023 update to this data layer. Inactive sites are where monitoring has ceased. Project-based Deployments are sites that were only visited once for a specific project. For example, a glider deployment or a one-time cruise would be categorized as a project-based deployment. If the status of the site is unknown, this will be NULL.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Publicly Available?
Attribute_Definition: Indicates if the monitoring data from this site is publicly available. “Yes” defines sites as publicly available. “No” defines sites as not publicly available.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Contact

Attribute_Definition: Name and email address of point of contact for further information about the monitoring occurring at the site.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Sector
Attribute_Definition: Indicates the sector of the institution leading monitoring at this site. Categories include: State Agency, Federal Agency, Academic Institution, NGO, Citizen Science, Local Government, or Research Institution.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Biological Parameters
Attribute_Definition: List of any biological indicators that were collected alongside chemical monitoring. Biological Parameters include, but aren't limited to: Benthic Biodiversity Surveys, Oyster survival and growth, trawl data, Chlorophyll-a, etc.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Season
Attribute_Definition: List of seasons during which monitoring at the site occurs.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: Quality Assurance
Attribute_Definition: Description of quality assurance and quality control methods used at the site.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: pCO2 Methods
Attribute_Definition: In the event that pCO2 is measured at the site, this attribute describes the specific methods in use for measurements of pCO2. Methods are parsed as Continuous or Discrete, and then specific instruments or methods in use are listed where data is available.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: TA Methods
Attribute_Definition: In the event that Total Alkalinity (TA) is measured at the site, this attribute describes the specific methods in use for measurements of TA. Methods are parsed as Continuous or Discrete, and then specific instruments or methods in use are listed where data is available.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: DIC Methods
Attribute_Definition: In the event that Dissolved Inorganic Carbon (DIC) is measured at the site, this attribute describes the specific methods in use for measurements of DIC. Methods are parsed as Continuous or Discrete, and then specific instruments or methods in use are listed where data is available.
Attribute_Definition_Source: MARCO

Attribute:
Attribute_Label: pH Methods
Attribute_Definition: In the event that pH is measured at the site, this attribute describes the specific methods in use for measurements of pH. Methods are parsed as Continuous or Discrete, and then specific instruments or methods in use are listed where data is available.
Attribute_Definition_Source: MARCO

Metadata_Reference_Information:
Metadata_Date: 20231017
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization:
Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA), Rutgers University
Contact_Person: John A. Bognar
Contact_Position: GIS Coordinator
Contact_Address:
Address_Type: mailing and physical
Address: 14 College Farm Road
City: New Brunswick
State_or_Province: New Jersey
Postal_Code: 08901-8551
Country: US
Contact_Voice_Telephone: 848-932-1582
Contact_Electronic_Mail_Address: johnb@crssa.rutgers.edu
Metadata_Standard_Name: FGDC Content Standard for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Time_Convention: local time