



## Coastal Training Program Strategic Plan: 2013-2018

### I. Introduction

The Maryland Chesapeake Bay National Estuarine Research Reserve-Maryland (CBNERR-MD or Reserve) Coastal Training Program (CTP) was established in 2008 and has experienced tremendous growth since its inception. This five-year Program Strategy document updates the strategic plan completed in 2008 and reflects input from key CTP partners including staff at the Maryland Department of Natural Resources (CBNERR-MD, Chesapeake and Coastal Service); Maryland Sea Grant; and the Coastal Training Program Advisory Committee. Building on the growth and success of Maryland's CTP to date, the current Strategy outlines a set of programmatic goals and identifies objectives and outcomes that address priority Chesapeake Bay conservation issues for local government staff, appointed and elected officials and other decision makers in Maryland's coastal counties. Program priorities will be modified if emerging issues arise or ongoing needs assessments identify new priorities for the targeted audience.

### II. Program Context

#### *Programmatic*

The mission of the Maryland Coastal Training Program (CTP) is to enhance informed decision making about Chesapeake Bay natural resource conservation and management issues through the transfer of science-based information to audiences whose actions impact natural resources in Maryland's coastal counties. The Maryland CTP serves decision makers in 16 coastal counties and Baltimore City. Maryland counties have significant decision-making authority regarding urban/suburban development, land use, and planning as well as authority over public education.

Established in 2008, the Maryland CTP has trained more than 1,000 local decision makers on a variety of topics including climate change and sea level rise; best management practices to create sustainable communities; communicating conservation effectively; facilitation and engagement of stakeholders; living shorelines and Critical Area management and restoration. CTP has played an integral role in helping to achieve the Reserve's management goal to: "enhance peoples' ability and willingness to make informed decisions and take responsible actions that affect Maryland's coastal communities and ecosystems" and is critical in helping the Reserve address key management issues of:

- Addressing the impacts of development and population growth along the shoreline and in the watersheds on habitats; living resources; and ecosystem function.
- Understanding, planning, and adapting to climate change and its impacts.

CTP has also helped to advance Maryland coastal management objectives of coastal hazard preparedness and sea level rise adaptation. In addition, through a partnership with the Maryland Department of Housing and Community Development in 2009, CTP created a sustainability guide called “Going Green Downtown: A Sustainability Guide for Maryland’s Main Streets” as part of Governor Martin O’Malley’s Smart, Green and Growing Initiative.

A full list of programs offered from 2008–2010 can be found in Appendix A.

### *Ecological & Social*

The Chesapeake Bay is the largest estuary in the United States and is one of the most productive bodies of water in the world. It is situated in the mid-Atlantic area of the Atlantic coastal plain in the Chesapeake Bay sub-region of the Virginian biogeographic region. Roughly half of the Chesapeake Bay is located in the State of Maryland and half in the Commonwealth of Virginia. The watershed of the Chesapeake Bay extends into four additional states: Delaware, Pennsylvania, New York and West Virginia<sup>1</sup>. More than 16 million people live in the Bay watershed with 5.6 million in Maryland alone. At current rates, the population of Maryland’s coastal zone is estimated to increase by an additional half million people over the next 20 years with more than 560,000 acres being developed throughout the state by 2030<sup>2</sup>. This increasing population places growing demands on the Bay’s natural resources and contributes to both point and non point source pollution in the form of nutrient enrichment and sedimentation. Tremendous efforts have been made to reduce pollution and improve water quality since the formation of the Chesapeake Bay Program in 1983. However, due to this expanding population and corresponding development, managing non point source pollution is an ongoing challenge. At the same time, this challenge is complicated by the potential impacts of climate change and sea level rise. There are approximately 4,300 miles of shoreline in the Maryland portion of Chesapeake Bay, and Maryland is the third most vulnerable state to sea level rise behind Florida and Louisiana.

Maryland is a home-rule state with local government staff and appointed and elected officials making local land-use decisions. In 2009, Maryland municipalities and counties were mandated to adopt a Water Resource Element within their Comprehensive Plan to address how water supply, wastewater effluent and stormwater runoff will be managed to support current needs and projected future growth. To address non point source pollution, habitat conservation and restoration, and climate change adaptation, local officials and staff and other decision maker audiences need relevant scientific information. Pertinent information includes the effects of land use change and population increase on water quality; technical information about best management practices and strategies to conserve and restore local waters; and timely information about sea level rise and climate change vulnerability. The Maryland CTP, in collaboration with its partners, plays a critical role in providing these services.

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<sup>1</sup> Chesapeake Bay National Estuarine Research Reserve-MD 2008 Management Plan

<sup>2</sup> MDP Maryland State Data Center for total population projections between 2010 and 2040

### **III. Current & Anticipated Partnerships**

The Maryland CTP leverages a variety of resources within the Chesapeake Bay conservation and management community to deliver scientific and technical expertise. Key partners include a variety of units and programs of the Maryland Department of Natural Resources (e.g., Critical Area Commission, CoastSmart, etc.), Maryland Sea Grant; the University of Maryland; local government staff in Anne Arundel, Harford, Prince George's and Somerset counties, and other government, university, non-profit and local entities. Anticipated partnerships include the Watershed Assistance Collaborative; Maryland Department of the Environment; Maryland Marine Contractors Association; and furthering the existing partnerships listed above. Appendix B is a list of partners that Maryland CTP has partnered with since 2008.

### **IV. Contribution to Department of Natural Resource & Chesapeake Bay National Estuarine Research Reserve Mission, Goals & Objectives**

The mission of CBNERR-MD is to improve coastal resource management by increasing the scientific understanding of estuarine systems and making estuarine research relevant, meaningful, and accessible to managers and stakeholders. The Maryland CTP contributes to this mission through Goal 3 of the 2008 CBNERR-MD management plan – “Enhance peoples’ ability and willingness to make informed decisions and take responsible actions that affect Maryland’s coastal communities and ecosystems.”

The Maryland CTP supports the following Goal 3 Reserve Objectives:

- Reserve Objective 3.2. Maryland’s urban and rural citizens will have an increased understanding of the ecological, economic, historical and cultural importance of estuarine and coastal resources and how human choices and natural disturbances impact social, economic and estuarine ecological systems.
- Reserve Objective 3.3. Coastal decision-makers will receive knowledge, information, and skills to improve coastal management.

Specifically, CTP supports Objective 3.2 by offering science-based training and information on topics ranging from Living Shorelines to Sustainable Communities. Objective 3.3 is supported by offering workshops; online courses and developing materials that relay science-based information on Chesapeake Bay conservation and restoration issues

In addition to supporting the Reserve goals and objectives, the Maryland CTP serves in a critical role of supporting the state of Maryland’s mission to “secure a sustainable future for our environment, society, and economy by preserving, protecting, restoring, and enhancing the State’s natural resources.” By providing skills and technical assistance to local decision makers, the Maryland CTP is ensuring specifically that communities are more informed and better prepared for future storm events, shoreline change, and sea level rise; using ecosystem based approaches in resource management decisions; and increasing habitat quality and quantity through restoration practices.

## V. CTP Mission, Goals and Objectives

The Mission of Maryland CTP is to enhance informed decision making about Chesapeake Bay natural resource conservation and management issues through the transfer of science-based information to audiences whose actions impact natural resources in Maryland's coastal counties.

### **Goal:**

Over the next 5 years the goal of the Maryland CTP is to inform decision makers to further the stewardship, conservation and restoration of the Chesapeake Bay and its tributaries; to promote sustainable growth and development in its watersheds; and to prepare and adapt to climate change impacts in Maryland. To achieve the CTP's mission and goal, the CTP plans to address the following outcomes:

### **Program Outcomes:**

Maryland Decision Makers...

- 1) Acquire science based information and skills needed to make informed decisions.
- 2) Understand how their decisions impact the Chesapeake Bay, its tributaries and watersheds and natural resources.
- 3) Apply the information obtained through targeted products, tools and services to protect and restore the Chesapeake Bay, its tributaries and watersheds and natural resources.
- 4) Share and relate information and data needs to the scientific community so that relevant research is conducted to support management of the Chesapeake Bay its tributaries; watersheds; and natural resources.

The scientific community...

- 5) Understands and is aware of decision maker information and data needs, conducts relevant research, and communicates needed information on Chesapeake Bay to resource management managers and local decision makers.

### **Outcome 1: Acquire science based information and skills needed to make informed decisions.**

Objective: Annually, six training courses will be held to interpret information and skills focused on watershed and Critical Area management; coastal hazards, sea level rise and climate change; and restoration and conservation science.

### **Outcome 2: Understand how their decisions impact the Chesapeake Bay, its tributaries and watersheds and natural resources.**

Objective: By 2017, 75% of surveyed participants demonstrate that they have an understanding of how local land use decisions impact the natural resources and waters of the Chesapeake Bay and its tributaries.

### **Outcome 3: Apply the information obtained through the targeted products, tools and services created for them to protect and restore the Chesapeake Bay and its tributaries, watershed and natural resources**

Objective: By 2017, 75% of surveyed participants will indicate that they have applied science based information or skills obtained through a CTP course; tool or service in their decisions in either their professional or volunteer work.

**Outcome 4: Share and relate information and data needs to the scientific community so that relevant research is conducted to support management of the Chesapeake Bay its tributaries; watersheds; and natural resources.**

Objective: Annually, 50% of the training courses will include an opportunity for participants to communicate and discuss information and data needs.

**Outcome 5: The scientific community is aware of decision maker information and data needs, conducts relevant research, and communicates needed information on Chesapeake Bay resource management.**

Objective: By 2017, 25% of the CTP courses will include research and monitoring information being conducted by the Reserve staff, its partners and within the Reserve boundaries that has been analyzed and interpreted in a way that is meaningful for CTP target audiences.

Objective: Annually, 3-5 members of the scientific community will be able to identify decision maker information and data needs and communicate how their research may be utilized by decision makers.

**VI. Priority Audiences**

The primary audience of the Maryland CTP is county and municipal government staff in Maryland's coastal zone. An emerging audience will be appointed and elected officials in Maryland's coastal counties. The Maryland CTP has and will continue to offer and support programs for other decision makers (e.g., watershed organizations, business owners, consultants, contractors, state agency personnel, homeowners and other groups) as needs are identified. County and municipal government staff that makes decisions affecting Chesapeake Bay waters and watershed within the following agencies will be targeted: planning and zoning, public works, parks and recreation, health, emergency management, and others.

**VII. Priority & Emerging Issues**

The initial focus of the Maryland CTP as identified in the 2007 CTP Needs Assessment and 2008 CBNERR-MD management plan was:

- Population Growth
- Climate Change and Sea Level Rise

Through informal needs assessments and feedback these topics have been narrowed into more specific topics underneath these broad topics. The Maryland CTP is now structuring its courses in the following manner. Courses will be created to address these topics.

### Managing the Effects of Development along the Shoreline

- Critical Area Management and Conservation
- Living Shorelines

### Coastal Flooding, Climate Change & Sea Level Rise

- CoastSmart Communities
- Climate Change & the Watershed

### Watershed Management & Sustainability

- Sustainable Communities
- Phase II Watershed Implementation Plans
- Ecosystem based Management & Habitat Conservation Priorities
- Restoration Science

### Professional Development & Skills Trainings

- Science Communication and Translation
- Facilitation
- Project Design and Evaluation

### Focus Area: Managing the Effects of Development along the Shoreline

Development along the shoreline and within Maryland's Critical Area has a measurable impact on the natural resources and water quality within Chesapeake Bay and its tributaries. There is a continued pressure to develop these areas and, in response, Maryland has passed regulations related to the management of resources within the Critical Area (1,000 feet landward of tidal waters and tidal wetlands) and along the shoreline. The purpose of these regulations is to minimize the impact that development has on water quality and habitat. The managing agency's challenge is to ensure that the regulations are being implemented in accordance with their intent and that they produce the desired outcomes. Maryland CTP will continue to assist the management agencies in providing courses that convey the most current information about the regulations and how they should be implemented. Maryland CTP will also ensure that habitat conservation and restoration objectives related to living shorelines will be adequately addressed through trainings.

### Focus Area: Coastal Flooding, Climate Change and Sea Level Rise

Approximately 70% of Maryland residents live within Maryland's 16 coastal counties and municipalities, making Maryland's population highly vulnerable to the potential impacts of climate change. The Maryland Commission on Climate Change has issued two adaptation plans that outline strategies for reducing the State's vulnerability to the effects of climate change: *Adaptation Phase I: Sea Level Rise and Coastal Storms* and *Adaptation Phase II: Building Societal, Economic & Ecological Resilience* (available online at [www.dnr.state.md.us/climatechange](http://www.dnr.state.md.us/climatechange).) In response to recommendations put forth in those reports there is a concerted effort to advance adaptation planning and implementation.

CTP has engaged in a partnership with the CoastSmart Communities Initiative and other partners to further define the adaptation planning and implementation needs focused on sea level rise and coastal flooding. Under the umbrella of CoastSmart Communities, high quality training, technical assistance and consistent messaging will be provided to prepare communities for potential sea level rise impacts. Additionally, with the Reserve in a unique role of sitting at the nexus between the estuary and the watershed, CTP will explore with partners ways to better understand, plan for and communicate climate impacts. This would include working with the Reserve Research Coordinator to ensure that monitoring information generated as a NOAA sentinel site for climate change is utilized by state and local decision makers.

#### Focus Area: Watershed Management & Sustainability

Throughout Maryland's portion of the Chesapeake Bay watershed over the last fifteen years there has been much emphasis on watershed management and planning. Local governments in particular are focused on land use planning. Their priorities are generally focused around managing growth, maintaining and creating economic vitality, and meeting the needs of their communities. It can be challenging to meet these needs while also balancing the larger protection, conservation and restoration goals for the Chesapeake Bay.

CTP previously partnered with the Department of Housing and Community Development and of the Office for a Sustainable Future to develop a training program on the principles and fundamentals for creating sustainable local communities. This work will continue and CTP will expand its partnership with the Watershed Assistance Collaborative and the Department of Natural Resources to develop trainings focused on habitat conservation priorities and watershed restoration. Where applicable the Reserve sites will be used to demonstrate best management practices for restoration and land management. CTP will work with Reserve staff and other partners to communicate this information to the appropriate audiences.

#### Emerging Issue: Watershed Implementation Plans: Phase II

Watershed planning has been taking place in Maryland for over 10 years. However, in 2009 the EPA charged the Chesapeake Bay watershed states, including Maryland, with developing watershed implementation plans (WIPs) to provide assurance that the jurisdictions will achieve nutrient and sediment reductions necessary to achieve the Total Maximum Daily Load (TMDL) allocations within their boundaries. Maryland CTP will partner with the Watershed Assistance Collaborative and others to assist decision makers in implementing projects to achieve the 2 year reduction milestones and WIP Phase II plans. Programs will focus on reducing nutrients and sediments through Best Management Practices (BMPs).

Issues that CTP will assist decision makers with related to BMP implementation include:

- Technical assistance for construction or implementation of BMPs
- Choosing BMPs related to municipality and county specific concerns (i.e., rural vs. urban BMPs)

- Updating plan implementation tools to achieve nutrient and sediment reduction goals
  - Zoning ordinances
  - Storm water regulations
  - Forest Conservation regulations and ordinances
  - Subdivision regulations

### **VIII. Training Delivery System**

A priority for the Maryland CTP is to create an efficient, coordinated approach to training that meets the needs of decision makers, reduces redundancy and capitalizes on limited resources. In order to achieve this Maryland CTP is in the process of transitioning to a more course-based system focused around the four key topic areas described in Section VII above:

1. Managing the Effects of Development along the Shoreline
2. Coastal Flooding, Climate Change & Sea Level Rise
3. Watershed Management & Sustainability
4. Professional Development & Skills Trainings

A group of partners who are technical experts for each topic area will assist in course development. Partners will develop and agree upon curriculum and identify instructors. By developing curriculum for courses, it allows them to be offered multiple times a year and by the core partners in addition to CTP staff. The method by which the trainings are delivered and the specific topic focus is driven by decision maker preferences collected through formal and informal needs assessments. External partnerships will continue to be cultivated with government agencies, watershed organizations and academic institutions to develop, market and deliver trainings. Additionally, Maryland CTP will convene core partners by the end of 2012 and determine how the group can better coordinate efforts and “market” each other’s training or technical assistance. Identify areas where the group can collaboratively capitalize on funding opportunities and what mechanism will allow us to update each other on individual programs more regularly. Additionally, CTP staff will meet with the Reserve manager and other sector coordinators to identify ways that CTP programs can be better supported/integrated by other sectors and with other ongoing Reserve projects/programs.

### **IX. Monitoring and Evaluation**

Short-term outcomes and effectiveness of the CTP in meeting its training objectives will be measured through participant evaluation surveys and other assessment tools. Mid- to long-term outcomes will be tracked through interviews at least six months after the event and through the collection of outcomes statements and success stories. The success stories in particular will help capture and evaluate the success of multi-year projects and outcomes common to CTP focal issues.

### **X. Program Administration**

The CTP supports two full-time positions—a CTP Coordinator in a permanent FTE position and a CTP Aide in a long term contractual position. Over the next five years, in



order to expand the success of the program and meet the goals and objectives, CTP will look to leverage its partnerships with both internal and external partners to identify collaborations and funding opportunities. If appropriate, Maryland CTP will look to charge for courses to further support the program.

Marketing and having a clear direction and purpose is essential to the success of CTP. To date, CTP has not had any issues in filling programs and often has had to repeat a course due to high demand. In order to continue this momentum, CTP will continue to maintain and further develop the website [www.coastaltraining-md.org](http://www.coastaltraining-md.org). Since this is a separate site from the Reserve's DNR webpage, CTP staff will make sure that its events are properly advertised on the main Reserve site and through its Facebook page. CTP also maintains an electronic mailing list through the online service Mailchimp. Participants can sign up through the website and CTP staff enters all those who have attended CTP workshops to expand the list of potential training audiences. Many CTP programs are by invitation or at the request of a partner and the Program will continue to offer these type programs. Additionally, CTP relies on its partners and their networks to promote CTP courses and events. CTP will continue to explore new ways to promote courses and programs with existing partners. Additionally, CTP will work internally within the Chesapeake and Coastal Service and the Department to better package and advertise the services and technical assistance for local governments that is provided.

Appendix A: Trainings and Technical Assistance Offered 2009-2011

Appendix B: Maryland CTP Partners

Appendix C: Maryland CTP Advisory Committee

## **Appendix A: Trainings and Technical Assistance Offered 2008-2011**

### October 2008- September 2009

Communities Going Green Too  
How Prepared are You for Rising Waters? Planning for Sea Level Rise.  
Bayscaping for Homeowners & Community Organizations  
Communicating the Climate Change Message  
BayScaping for Homeowners and Community Organizations: Part II  
Creating Green Spaces on your Main Street  
Green Building Certification: How to get and use them  
Historic Preservation and Green: Rehab of existing commercial buildings  
Greening Main Street Merchants- Reduce, Reuse and Recycle  
Living Shorelines Workshop for County Planners  
Communicating Conservation to Citizens Workshop  
Communicating Conservation to Citizens: Online Course  
Wild Rice Restoration Workshop  
Living Shoreline Workshop for Homeowners: St. Mary's County  
Stormwater: Don't Get Washed Away  
Project Design and Evaluation

### October 2009-September 2010

Bay Smart Basics: Critical Area Planning for Municipalities  
Sustainable Communities InService Training  
Coastal and Watershed Outreach Exchange Part II  
Living Shoreline Workshop: St. Mary's County  
Tributary Strategy Team Annual Meeting  
Commercial Recycling 101  
Conservation Land Management: Anne Arundel County  
Coastal Inundation Mapping: GIS course  
Critical Area Buffer Workshops  
Rain Garden/ Rain Barrel Workshop

### October 2010-September 2011

Facilitation Training for Scientists & Resource Managers  
TMDL 101 & Role of Phase II WIP Liaisons  
Leadership Training for Tributary Strategies Program  
Protecting the Buffer and other Habitat Protection Areas in the Critical Area  
Protecting Critical Area Resources through the Project Review Process  
Baywise Gardening and Rain Gardens for Homeowners

**Appendix B: Maryland Coastal Training Partners**

Maryland Department of Natural Resources: Chesapeake and Coastal Service  
Maryland Department of Natural Resources: Office for a Sustainable Future  
Maryland Sea Grant Extension  
Maryland Department of Housing and Community Development  
Maryland Critical Area Commission  
Maryland Department of the Environment  
Anne Arundel County  
Prince George's County  
Harford County  
Maryland Watershed Assistance Collaborative

**Appendix C: Maryland CTP Advisory Committee**

Kate Skaggs:	CoastSmart Communities Initiative
Sandi Olek:	Office for a Sustainable Future, DNR
Vacant:	Manager, CBNERR-MD
Pati Delgado:	Research Coordinator, CBNERR-MD
Pat Pudelkewicz:	Environmental Planning Chief, Harford County
Greg Lewis:	Site Manager, Patuxent River Park
Vacant:	Site Manger, Jug Bay Wetlands Sanctuary
Vicky Carrasco:	Maryland Sea Grant Extension
Mary Owens:	Critical Area Commission
Kriste Garman:	Site Manger, Anita C Leight Estuary Center
Fred Tutman:	Patuxent RiverKeeper