Federal Commitments to Implement the *Chesapeake Executive Council Directive No.21-1 Collective Action for Climate Change*.

Update on Progress

July 2024

U.S. Environmental Protection Agency

- Leverage the Infrastructure Investment and Jobs Act's historic funding to enhance ecosystem and community resilience in the Chesapeake Bay watershed, especially in communities which are underserved and disproportionally at risk from climate change.
    - EPA has committed IIJA funding to support climate adaptation and ecosystem/community resilience across the Chesapeake Bay watershed, including through the Forest Buffer, Urban Tree Canopy and Wetlands Goal priorities grant funding, the Green Street, Green Jobs, Green Towns (G3) grant program, the Wetlands Capacity Building grant, development of tools and information for climate-resilient stormwater management and design, and through the Innovative Nutrient and Sediment Reduction and Small Watersheds Grants programs. EPA has directed that at least 40% of IIJA funding for certain implementation grant programs be allocated in underserved communities.
- Enhance understanding of Best Management Practice (BMP) responses to climate change conditions and support implementation of climate adapted BMPs, including new and emerging BMPs
    - *EPA is funding work to advance the recommendations of the Urban Stormwater Workgroup and Climate Resiliency Workgroup to develop information and tools that help localities integrate climate considerations into stormwater planning, management and/or design. This work will also provide estimates for the impacts of future hydrology on a range of widely used BMPs and pollutant removal efficiencies for different BMPs and uncertainties associated with future hydrology*.
- Identify actions in Climate Adaptation Implementation Plans that align with Directive goals; encourage collaboration to enhance outcomes.
    - *EPA CBPO is coordinating with the EPA Mid-Atlantic Office on developement and implementation of the Regional Climate Adaptation Implementation Plan to promote opportunities for regional collaboration and alignment. EPA CBPO has contributed to several regional climate adaptation projects which advance objectives of the CBP Climate Directive, including a project to develop methods for blue carbon assessment and implementation of coastal management solutions incorporating blue carbon resources.*

U.S. Department of Defense

- Report on Readiness and Environmental Protection Integration (REPI), REPI Challenge, and Sentinel Landscape Projects that include climate resilience co-benefits.

- *In FY23, 7 installations reported new land conservation projects: Aberdeen Proving Ground (Army), Fort Walker (Formally – Fort A.P. Hill - Army), Fort Indiantown Gap (Army), NAS Patuxent River (Navy), NSA South Potomac – Dahlgren (Navy), Marine Corps Base Quantico, Joint Base Langley-Eustis (Langley)*
- *In FY23, $27.9M was invested in conserved land projects; two installations funded REPI projects with climate resilience co-benefits. $27M is being requested for land protection in FY24.*
- *Marine Corps Base Quantico (MCBQ) received $286K in FY23 REPI Challenge funds for resilience planning improvements. Undertaking a proactive approach, the Quantico project will address solutions for the pluvial flooding of Little Creek and shoreline. In FY22, 6 installations reported new land conservation projects: Aberdeen Proving Ground (Army), Fort Walker (Formally – Fort A.P. Hill - Army), Fort Indiantown Gap (Army), NAS Patuxent River (Navy), NSA South Potomac – Dahlgren (Navy), NWS Yorktown (Navy)*
- *In FY 22, $10.8M was invested in conserved land projects; four installations funded REPI projects with climate resilience co-benefits. In FY23, $27.9M was invested in conserved land projects; two installations funded REPI projects with climate resilience co-benefits. Naval Air Station Patuxent River was a recipient of 2022 REPI Challenge funds including $2.7M in REPI funds, $14.8M in military service contributions and $15K in partner contributions to restore crucial shoreline reaches, including living shorelines, to protect strategic Navy testing and training operations and northern diamondback terrapin nesting habitat.*
- *NSA South Potomac – Dahlgren was awarded $2,968,000 (Navy to cover $1,484,000). The Trust for Public Land brought forth the project and the Navy partnered with Virginia Outdoors Foundation to protect one property (Horner Beach).*
- *The DoD CBP worked with the Commonwealth of Virginia to achieve designation of the Virginia Security Corridor Sentinel Landscape, including the Tidewater and Potomac Sentinel Landscapes. The Virginia Security Corridor supports 10 military installations representing every branch of the U.S. Armed Forces. Specifically, the Potomac Sentinel Landscape is anchored by Marine Corps Base Quantico and the Tidewater Sentinel Landscape is anchored by Joint Base Langley Eustis. A decision was made to designate the Sentinel Landscape on July 10, 2023. A coordinator for each of the Sentinel Landscapes is anticipated to be hied in the Spring/Summer 2024.*

- Provide a tally of dollars spent and a list of water quality best management practice project types implemented that provide climate resilience co-benefits.
  - *In FY23, $282,407 was spent on projects whose primary purpose was to provide for climate resilience.*
  - *Based on a Tetra-Tech report and DoD CBP best professional judgement, stormwater BMPs, natural and nature-based features (NNBF), and conservation projects were considered to provide flood protection/mitigation or other climate resilience co-benefits. (DoD will provide list of BMPs upon request)*

- *In FY22, $144,374 was spent on projects whose primary purpose was to provide for climate resilience.*
- *In FY23, $282,407 was spent on projects whose primary purpose was to provide for climate resilience.*
- *In FY22, DoD installations in the watershed spent $13,972,042.69 on 82 BMP projects with climate resilience co-benefits.*
- *In FY23, DoD installations in the watershed spent $20,557,653 on 169 BMP projects with climate resilience co-benefits*
- *DoD installations conducted 22 projects and planted the equivalent of 23.6 acres of trees in FY22.*
- *DoD installations conducted 56 projects and planted the equivalent of 69.8 acres of trees in FY23.*

- Report on the number and percentage of installations who have updated their Integrated Natural Resource Management Plans to address climate change.
  - *In FY23, 27 installations reported updating their Integrated Natural Resource Management Plans to address climate change. That represents 75% of the total. Installations reported 48 un-funded INRMP projects that could provide climate resilience co-benefit.*

Additional Department of Defense Activities

- Report on the incorporation of climate resiliency themes into existing DoD CBP outreach materials (Quarterly Journal articles, factsheets, Annual Progress Report, etc.) to build climate literacy and a climate-informed workforce.
  - *The DoD CBP publishes the Chesapeake Bay Program Journal quarterly and it featured the following articles related to climate resilience:*
  - *Spring 2023 Journal: Navy Climate Resilience Funding and Contract Support; Commanders' Corner: Resources for Effective CBP Information Transfer to Commanding Officers; Natural and Nature-Based Features to Build Resilience*
  - *Summer 2023 Journal: Commander's Corner: Chesapeake Bay Commanders' Conference After-Action Report; Effects of Rising Water Temperatures in the Chesapeake Bay Watershed; Promoting Awareness and Education at Fort-Gregg Adams and Naval Station Norfolk – Public outreach events to promote environmental stewardship and climate resilience in the DoD community.*
  - *Winter 2024 DoD Chesapeake Bay Program Journal: Commander's Corner: The DOD Launches its First Ever Climate Resilience Portal; Carbon Sequestration Initiatives at Defense Supply Center Richmond; Assessment of the Chesapeake Bay TMDL: Impacts of Climate Change*
  - *The DoD CBP has published or is in the process of publishing factsheets for installations, including:*

- *An update to the Commanders Guide to the Chesapeake Bay including new climate resilience themes*
- *Stormwater BMPs and Real Property Classifications – aimed at facilitating the maintenance of stormwater BMPs and preventing flooding. GIS Tools to Meet Multiple DoD Goals and Objectives – including working with partners in defense communities to strategically target projects that simultaneously provide for mission assurance while also meeting water quality, land conservation, encroachment prevention, climate resilience, and DEIJ goals.*
- *Funding Projects to Achieve Mission Assurance Objectives – A Quick Guide – a guide which laid out programs that could provide funding for both on-base and off-base climate resilience projects, matching requirements, partnership requirements, activities funded, and funding cycles. This factsheet has been cleared for external distribution and has been provided to partners.*
- *Climate Vulnerability Assessments for Mission Sustainment – designed to help installations identify installations, infrastructure and facilities, stormwater assets, and natural resource habitats threatened by changes in climate.*
- *The DoD CBP's Annual Progress Report (APR) is its most important internal and external outreach tool for explaining the DoD's program and documenting progress towards DoD's Chesapeake Bay Program Partnership goals and objectives. The FY2021 and most recently published FY2022 APR identifies military installation projects with climate resilience co-benefits in the Chesapeake Bay Program Partnership's management strategy categories of Abundant Life, Conserved Land, Engaged Communities and Water Quality. The APR also highlights collaborative efforts with partners in cooperative community planning, REPI and Sentinel Landscape Program project implementation for climate resilience, and the establishment of DoD CBP climate metrics. Current and past editions of the APR can be found at: https://denix.osd.mil/chesapeake/dod-cbp-annual-progress-reports/*

- Report on the number and percent of major installations with a DoD Climate Assessment Tool (DCAT) threat assessment. The DCAT provides a screening-level assessment of an installation's future climate exposure related to eight hazards: coastal flooding, riverine flooding, heat, drought, energy demand, land degradation, wildfire, and historical extreme weather events.
    - *64 military installations in the watershed were provided with a DCAT assessment. This information can be used to guide installation resilience planning including the protection and enhancement of natural and nature-based features providing climate resilience and carbon sequestration co-benefits.*
- Report on significant collaborative efforts to enhance resilience (VCRMPF, SERDP research, MIR/CUP planning efforts, CBF Billion Oysters for the Bay, etc.)
    - *The DoD CBP is working with the Army Corps of Engineers Engineering with Nature Initiative to develop a toolkit and preliminary design for natural and nature-based projects to address climate resilience at Langley Air Force Base in VA.*

National Oceanic and Atmospheric Administration

- Work with partners to conduct climate focused summer teacher workshops, develop online course that models use of Climate data tools, and support the development and implementation of a climate education needs assessment for the region.
    - *The Environmental Science Training Center hosted a professional development this past March focused on climate actions happening at the national, state, local and school district level to help attendees think about current action and initiatives their students could join or support. Mid-Atlantic Climate Change Education Conference is scheduled for June 25-27 (www.maccec.org) and is currently soliciting presentation proposals. The climate change online course is completed and live on Chesapeake Exploration. The 2023 Environmental Literacy Summit focused on high impact actions for sustainable schools and green careers, both with a strong climate change orientation. NCBO supported CB-NERRs in promoting their climate education needs assessment in the Mid-Atlantic.*
- Coordinate the Chesapeake Bay Program Climate Resiliency Workgroup with an emphasis on connecting partners to pursue nature-based climate resilience projects (e.g., coastal wetland restoration).
    - *NOAA is co-leading the collaborative marsh adaptation project with the Chesapeake Bay Program's Climate Resiliency Workgroup. NOAA led a marsh adaptation workshop in January 2024 with partners from the Middle Peninsula, VA and Wicomico/Deal Island, MD to discuss opportunities for integrating marsh adaptation considerations in restoration and conservation targeting. NOAA is contributing to the development of the Chesapeake Bay Program's tidal wetland strategic plan by serving on the steering committee and assisting with identifying goals and strategies. NOAA staff served as co-PI on the $1.2 million proposal, "Oyster Reefs as Nature's Breakwater: Quantifying Climate-Resilient Adaptation Performance," with George Mason University, Tetra Tech, and Virginia Institute of Marine Sciences submitted to NOAA's Effects of Sea Level Rise funding opportunity.*
- Continue placed-based initiatives in the Choptank complex and Middle Peninsula to identify and support oyster and nearshore habitat restoration to enhance ecological and community resilience.
    - *NOAA continued working with the Envision the Choptank partnership established through NOAA's Choptank Habitat Focus Area work and supported Choptank watershed partners to advance climate resilience and habitat restoration. NOAA contributed to developing an updated shared implementation plan that prioritizes climate change throughout all objectives and strategies, and developed an underserved community civic engagement/climate resilience engagement program called LEAD the Shore. In 2022, NOAA established the Middle Peninsula Habitat Focus Area in collaboration with multiple NOAA offices and non-federal partners. Since its establishment, NOAA has*
        - *developed a coastal wetlands plan with regional partners*
        - *funded nearshore habitat restoration project designs*

        - *provided technical assistance on those projects to advise partners developing proposals or implementing projects on the York River and Mobjack Bay*
        - *funded oyster restoration for shoreline resilience in Mobjack Bay*
        - *funded and completed the nearshore oyster structures siting tool*
        - *funded research projects that studied the economic value of nearshore habitats (shorelines, SAV, oysters, wetlands)*
        - *developed the collaborative infrastructure of the regional partnership network focused on water quality, habitat restoration, and climate resilience - the York River Roundtable*
        - *engaged with tribal nations in the area, a highlight of which is a grant NOAA provided to the Mattaponi Tribe for shoreline restoration and capacity building*
- Continue operating the Chesapeake Bay Interpretive Buoy system to include temperature, salinity, hypoxia and fish telemetry observations.
    - *NOAA has expanded its observations program for more robust tracking and assessment of changing conditions in the bay and living resource response. NOAA currently maintains 8 CBIBS buoys in MD & VA that measure surface level water temperature and salinity. In 2024 we are deploying 6 Hypoxia buoys for dissolved oxygen and temperature data at various points in the water column. NOAA also has acoustic telemetry receivers on all buoys and partnered with state agencies to maintain telemetry receiver gates, all of which can be used to track and assess fish movement in response to climate change.*
- Provide research and synthesis quantifying the impact of climate change drivers on fish and habitat status and trends to support ecosystem-based fishery management.
    - *NOAA funded six research projects relating to climate change impacts on fish and habitats. We have also developed Chesapeake Bay seasonal summaries of water quality parameters, which include discussion of how the previous season's water temperature, dissolved oxygen, and salinity compare to average, as well as how any anomalies might affect living resources in the Bay. NOAA staff contributed Chesapeake Bay data to the NOAA Fisheries Mid Atanltic State of the Ecosystem report, and are leading the development of a Marine Heatwave indicator for the Partnership*

U.S. Army Corps of Engineers

- With our partners, continue to implement projects consistent with the Final Chesapeake Bay Comprehensive Plan (January 2021).
    - *Completed studies and/or implementation include Anacostia Stream Restoration, Mid-Bay Islands beneficial use of dredged material, several Section 510 projects (Little Conestoga, Cow Branch, Plum Creek,) and Starucca Creek.*
- Through Engineering with Nature, explore opportunities to implement natural and naturebased features to enhance climate resiliency.

- *Mid-Bay Islands and support to DoD installations are specifically exploring EWN approaches for implementation.*

- Maximize use of technical assistance programs such as Planning Assistance to States, Floodplain Management Services, National Hurricane Program and Silver Jackets.
    - *Technical Assistance programs have doubled over the past few years. Approximately 30 technical assistance projects are underway, with several addressing water resources issues in economically disadvantaged communities.*

- Collaborate with and support communities, installations, other federal and state agencies, and non-governmental organizations to leverage resources and expertise to proactively address the impacts of climate change.
    - *Attended the PSATS Conference, Local Government Advisory group, and many other outreach events, in additon to providing on-demand training and accessibility to USACE cost-sharing programs.*

Additional U.S. Army Corps of Engineers Activities

- *Served on the DoD Climate Action Team and completed outreach to installations on the Climate Action Tool. Incorporate climate change scenarios in all large feasibility studies. Technical assistance projects frequently address flooding trends and forecast future conditions for which alternatives are developed*.

U.S. Geological Survey

- Enhance monitoring of relative sea-level rise, through improved measurements of land subsidence and rising waters in coastal areas.
    - *USGS has launched several studies to enhance monitoring of relative sea-level rise and land subsidence in coastal areas. We are also working to do a better job quantifying the spatial variation in components of relative sea-level rise.*

- Conduct monitoring during extreme storm events of coastal inundation and inland flooding.
    - *USGS has developed a suite of coastal change tools to include marsh lifespan and wetland vulnerability (https://usgs.maps.arcgis.com/apps/instant/sidebar/index.html?appid=67d557aab0274465bf0bb1ce89cac06f). Other resources:*
    - *Coastal Wetland Geospatial Collection now live at https://geonarrative.usgs.gov/us_coastal_wetland_collection/*
    - *Coastal Wetland Synthesis geonarrative: https://geonarrative.usgs.gov/uscoastalwetlandsynthesis/*

- Develop and provide tools forecasting vulnerability and likelihood of change to coastal areas from sea-level rise.
    - *USGS has multiple studies underway to understand marsh migration and to evaluate marsh restoration efforts*

- Forecast how coastal marshes may migrate in response to on sea-level rise, sediment supply, and nearshore characteristics.
    - *Effort to be completed in 2024, with a paired status and trend computation for selected data.*
- Aggregate partnership water-temperature data across nontidal portions of the watershed and analyze data to describe status and trends in water temperature.
    - *Effort to be completed in 2024, with a paired status and trend computation for selected data.*
- Assess the potential effects of climate and land change on freshwater streams and fish populations.
    - *USGS has published multiple studies on how climate and land-use change may be affecting stream health and fish habitats:*
    - *https://pubs.usgs.gov/publication/70242660*
    - *https://pubs.usgs.gov/publication/70226875*
    - *https://pubs.usgs.gov/publication/70220862*
    - *https://pubs.usgs.gov/publication/70211908*
- Develop web-based hub of existing decision tools so climate change can be better considered for actions to improve water quality, restore habitats, and conserving lands.
    - Targeting portal was developed and released in 2023. https://gis.chesapeakebay.net/targeting/
- Engage stakeholders to understand and apply findings to increase resiliency of restoration and conservation actions to climate change.
    - *USGS continues to chair the Climate Resiliency workgroup.*

National Park Service

- Conduct Climate Vulnerability Assessments of all the coastal park sites of the Chesapeake Bay region which will provide recommendations for climate resiliency including adaptation, managed retreat, and protect-in-place decisions. The NPS has also started a dialogue with the Underground Railroad Network to Freedom members about partner sites and impacts from climate change.
    - *NPS is conducting vulnerability assessments for national parks in coastal environments across the U.S. NPS National Capital Region is conducting GIS vulnerability mapping and studies of historic buildings and landscapes located in river floodplain or coastal environments in the Chesapeake Bay watershed, specifically the Potomac and Anacostia watersheds*
    - *The NPS climate change program in the Northeast Region supports parks and programs in taking action on climate change adaptation, science, mitigation, and communication*

to effectively meet the NPS mission in a changing climate. Technical assistance is provided to parks on topics related to climate change adaptation:

- *guidance on developing adaptation strategies and prioritizing adaptation actions;*
- *support for vulnerability assessments and scenario planning;*
- *identification of adaptation options and decision support tools.*

- *A variety of climate science resources are available, from park specific briefs and analyses of historic trends and future climate projections; NPS regional office can help apply available resources to park management questions or provide technical assistance if resources not currently available.*
- *Coastal parks that have completed a vulnerability assessment or implemented adaptation strategies provide examples to share lessons learned. We coordinate across, natural resources, cultural resource, interpretation and facilities adaptation efforts.*
- *NPS Northeast Region has been leading on cultural resource climate adaptation including current projects on supporting adaptation for archeological sites and historic structures.*
- *Integration of climate change into planning processes is a priority, from Resource Stewardship Strategies, to General Management Plans and Fire Management Plans.*
- *NPS national parks in the watershed participation in the Climate Friendly Parks program. In addition, the NPS Northeast Region's climate change program participates in regional partnerships such as the DOI Northeast Climate Adaptation Science Center to advance development and demonstration of landscape scale science that benefit parks and share park climate adaptation successes with others.*

- Provide technical and financial support to convene and facilitate the Chesapeake Conservation Partnership (CCP), a large landscape collaborative of government, Tribal and nonprofit partners, collectively working to conserve 30 percent of the watershed by 2030 through prioritized and targeted land conservation. The Chesapeake Conservation Partnership is focused on the nexus of conservation, equity, community resilience, and ecosystem restoration. A new effort of the CCP called Chesapeake Conservation Ready will strive to collectively advance land conservation priorities within the watershed (federal and non-federal lands) and coordinate across multiple funding sources (Federal, state, local, private).
    - *In 2023, under the national Cooperative Ecosystem Studies Unit partnership, the NPS Chesapeake Gateways program funded a $250,000 agreement to advance large landscape conservation research, technical assistance and education. This project included several workshops to build knowledge and capacity within the land trust community across the watershed. In 2024, NPS expects to fund an addition $200,000 toward large landscape conservation research, technical assistance and education*.
- Develop a Chesapeake Gateway Communities program to collaborate and partner with underserved Bay communities and local organizations to support and promote local resilience and community sustainability, equitable access, welcoming experiences, inclusive storytelling,

community stewardship, and tourism and economic benefits tied with sectors closely linked with Chesapeake heritage, such as indigenous, handcrafted, agriculture and maritime activities.

  - *May 2204, NPS held the first Chesapeake Gateways Communities pilot workshop with five communities (MD: Annapolis, Cambridge, Havre de Grace; VA: Hampton, Tappahannock). The 4-day workshop included five teams of local community members reflecting a cross section of industries from local government, tourism, business, arts & culture, and conservation. The training supported each team as they conducted an assessment of their community assets (strength/gaps/opportunities), developed community action plans and identified several projects for the teams to bring back to their communities for further development.*
  - *To compliment the pilot workshop, NPS Chesapeake Gateways 2025 competitive grants will be focused on community scale projects. The 2025 grants will be open for applications August 2024-October 2024.*
  - *Within the next year, NPS Chesapeake Gateways program expects to engage 12 more gateway communities in Maryland through two workshops offered in partnership with and funded by Visit Annapolis/Anne Arundel County.*

- Continue to provide technical and financial assistance to develop and utilize Indigenous Cultural Landscape Studies in partnership and consultation with Tribal partners across the Chesapeake region so that the natural and cultural resources that supported American Indian lifeways and settlements and uniquely Indigenous perspectives can be understood and applied in land-management and climate resiliency decisions.
  - *In 2023, NPS Chesapeake Gateways funded a grant to the Rappahannock Tribe to support the creation of an Indigenous Environmental Education Center at Cat Point Creek.*
  - *In 2025, the NPS proposes $8 million to establish a new Tribal LWCF Land Acquisition program. The program will enable Tribes to directly participate in the LWCF for the first time to acquire lands for natural and cultural resource conservation and recreation access. The program will award funds for Tribal land acquisition projects consistent with the purposes of the LWCF and other program criteria.*
- Ensure consistent and meaningful Tribal consultation by establishing two permanent positions working across the Chesapeake watershed to serve as Tribal liaison.
  - *The NPS has established three positions within the Chesapeake watershed to ensure engagement and consultation with Tribal nations and partners. There are now two permanent Regional Tribal Liaison Officer positions, as well as a Tribal and Cultural Affairs Lead within the NPS. Eric Chaisson, the NPS Northeast Regional Tribal Liaison Officers is scheduled to be a keynote speaker at the 2024 Virginia Sovereign Nations Summit.*
- Utilize the Public Land Corps authority that provides youth under 30 years old and veterans under 35 years old with pathways to careers in conservation by offering direct hiring authority for two years following internships.

- *NPS annually hires hundreds of interns utilizing the Public Land Corps authority across DC and the six states of the watershed to complete conservation work for parks. These internships are creating lifelong stewards and serve as stepping-stones to Federal careers in conservation. Two recent examples of success: In 2023, the NPS Chesapeake Trail hired permanently one of their interns from the 2022 Werowocomoco Cultural Stewards Internship program. The new permanent NPS Chesapeake Trail staff member is not only a youth hire, he is a tribal citizen of the Nansemond Indian Nation. In 2024, NPS Chesapeake Gateways was able to utilize the PLC's direct hire authority to select an NPS Community Volunteer Ambassador intern into the office's permanent grants coordinator position.*

Additional National Park Service Activities

- *In 2023 NPS relaunched the NPS Climate Friendly Parks program (founded 2002) in support of the Green Parks Plan, and is engaging national parks across the U.S., including Chesapeake watershed parks, to create or update their CFP Climate Action Plans. NPS CFP established sustainability performance measures and the CLIP tool to measure parks' progress in meeting goals of reduced greenhouse gas emissions, energy use, water use, waste reduction, plus community outreach and visitor interface.*
  https://www.nps.gov/subjects/climatechange/cfpprogram.htm

U.S. Fish and Wildlife Service

- Identify opportunities for restoration and protection projects that enhance ecosystem and community resilience and mitigate the effects of climate change on the Chesapeake Bay, giving particular attention to projects that augment wetlands and forest buffers.
  - *Protecting Habitat Migration Corridors Between Blackwater and the Nanticoke River Watershed (MD) -Complete conservation easements in a critical wildlife habitat and marsh migration corridor between Blackwater National Wildlife Refuge and the Nanticoke River watershed. Project will permanently protect 300 acres through strategic landowner outreach efforts and support long-term resilience of wildlife populations and critical ecosystems of the Maryland's lower Eastern Shore.*
- Build the resiliency of vulnerable ecosystems and help fish, plants, and wildlife adjust to the impacts of climate change, by investing in cutting-edge science that will guide conservation, including land and species management, and habitat restoration.
  - *Marshes for Tomorrow -is a landscape-scale restoration plan for Maryland's saltmarshes. Marshes for Tomorrow is being spearheaded by Audubon Mid-Atlantic, and executed through the Delmarva Restoration and Conservation Network (DRCN).*
- Review best management practices and maintenance of stormwater and nonpoint source management on Refuge lands throughout the Chesapeake Bay to account for the impacts of climate change while protecting fish and wildlife habitats.
  - *On going support of the Feral Agency Workgroup*

- Provide support to the Chesapeake Conservation Partnership, a landscape collaborative of Federal, State and local government, Tribal, and nonprofit partners, collectively working to conserve 30 percent of the watershed by 2030 through prioritized and targeted land conservation.
    - *Chesapeake Conservation Partnership is a coalition of diverse organizations and agencies engaged in land conservation and related fields within the Chesapeake Bay watershed. Partners seek to extend the conservation of large landscapes throughout the region to benefit multiple values, including economic sustainability; scenic, historic and cultural heritage; working lands; important wildlife habitat; water quality and supply; and overall quality of life.*
- Lead a pilot study called Targeted Outreach for Green Infrastructure to prioritize natural resources, wildlife habitats, and public infrastructure needs in underserved communities at risk due to climate change. Two cities Cambridge, MD and Williamsport, PA were chosen as pilot cities. In addition, two Tribal communities were chosen for this pilot.
    - *TOGI-Many communities are adopting green infrastructure as a strategy to manage stormwater, improve water quality, add habitat, and provide community benefits such as open space, pedestrian safety, shade and beautification. The Chesapeake Bay Program Habitat Goal Implementation Team (GIT) launched a pilot project, Targeted Outreach for Green Infrastructure in Vulnerable Areas (TOGI), to support Chesapeake Bay watershed communities in designing green infrastructure projects that meet community, watershed, and habitat conservation goals. Funded by a grant from the Chesapeake Bay Trust, Skeo Solutions was selected as the contractor to support the GIT lead and provide facilitation and green infrastructure planning services. The goal of the project is to equip local decision makers in Maryland, Virginia and Pennsylvania identify green infrastructure options that provide co-benefits to underserved and underrepresented communities. Skeo facilitated a series of custom listening sessions and workshops with local stakeholders to identify projects and refine concept plans. While the process was not intended to support broad community engagement, the stakeholder-identified project outcomes will provide a springboard for a full community planning process and grant applications for implementation.*
- Continue to work with the Baltimore Rivers to Harbor Urban Wildlife Refuge Partnership, and the Greater Baltimore Wilderness Coalition to build resiliency of vulnerable ecosystems and populations, help communities and wildlife adjust to the impacts of climate change. The Service will look for opportunities to expand and repeat the success of these initiatives in other cities throughout the Chesapeake Bay Watershed.
    - *The Baltimore Rivers to Harbor Urban Wildlife Refuge Partnership is a collaboration between the U.S. Fish and Wildlife Service (FWS) and other organizations to connect Baltimore residents with green corridors and Chesapeake Bay waters. The partnership's goal is to strengthen connections to wildlife and nature, which can improve the social and economic vitality of Baltimore communities. The partnership also aims to create a shared regional ethic of environmental stewardship.*

- Work with underserved communities to identify vacant lots to be restored as pollinator and tree canopy habitat, for community gardens in food deserts, and to offset urban heat island effects in these communities.
    - *Engaging Underserved Communities to Enhance Habitat for Imperiled Pollinator Species (MD)- Expand habitat for imperiled pollinators and gather data on bumble bees as an indicator species across 12 properties in Baltimore City. Project will engage underserved communities in this work by providing site leaders, community partners, and other stakeholders with education and technical assistance to support pollinator habitats.*
- Continue to work with Upper Mattaponi, the Mattaponi, and the Pamunkey tribes on developing climate resistant and sustainable communities on Tribal lands.
- Focus environmental literacy on understanding the impacts of climate change, promoting climate change topics into formal and nonformal K-12 education and encouraging environmental stewardship throughout the Chesapeake Bay watershed.
    - *The Baltimore Rivers to Harbor Urban Wildlife Refuge Partnership is a collaboration between the U.S. Fish and Wildlife Service (FWS) and other organizations to connect Baltimore residents with green corridors and Chesapeake Bay waters. The partnership's goal is to strengthen connections to wildlife and nature, which can improve the social and economic vitality of Baltimore communities. The partnership also aims to create a shared regional ethic of environmental stewardship*.