NORTH CAROLINA SENTINEL LANDSCAPE COMMITTEE



2023 ANNUAL LEGISLATIVE REPORT

September 1, 2023

Agriculture Commissioner – Steve Troxler – Chair
Executive Director, NC Wildlife Resources Commission – Cameron Ingram – Vice Chair
Deputy Secretary, NC Department of Natural and Cultural Resources – Jeff Michael – Secretary
Installation Coordinator, NC Department of Military and Veterans Affairs – Rick Long
Dean of the College of Natural Resources at NC State University – Dr. Myron Floyd
Representative of the North Carolina Sentinel Landscape Partnership – Chester Lowder

Pursuant to Section 3.19.(f) of Senate Bill 131 / S.L. 2017-10 … The Committee shall report on its activities conducted to implement this section, including any findings, recommendations, and legislative proposals, to the North Carolina Military Affairs Commission and the Agriculture and Forestry Awareness Study Commission beginning September 1, 2017, and annually thereafter, until such time as the Committee completes its work.

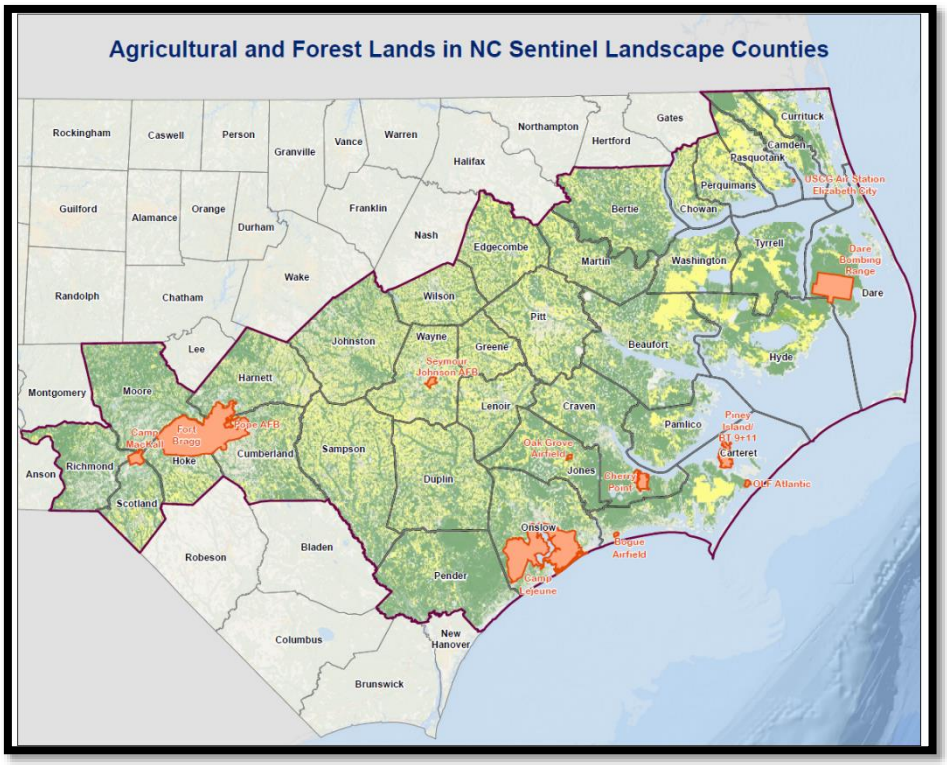
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Note: Because partner reports and meeting summaries were compiled from contemporaneous materials and activities prior to the formal renaming of Fort Bragg to Fort Liberty, all references to the former have been left intact.

What are Sentinel Landscapes?

The Eastern North Carolina Sentinel Landscape benefits agriculture, forestry, wildlife, and the military



- In 2016, the federal government designated 33 North Carolina counties as a Sentinel Landscape. The Eastern North Carolina Sentinel Landscape is one of 12 Sentinel Landscapes designated by the U.S. Departments of Agriculture, Defense, and the Interior.

- The national Sentinel Landscape Partnership is committed to empowering private landowners, strengthening military readiness, preserving natural resources, supporting agricultural productivity, and increasing access to outdoor recreation.

- Regions with increasing commercial and residential development affect agriculture, forestry, wildlife, and the military similarly, as development limits training abilities for the military and reduces viable farmland, forests, and natural areas.

- Agriculture and the military are the top two economic sectors in North Carolina. The Eastern North Carolina Sentinel Landscape leverages partnerships between military installations, federal departments, state agencies, local governments, and nonprofit partners that support North Carolina's top two economic sectors.

Purpose of the North Carolina Sentinel Landscape Committee



- Pursuant to state law, the North Carolina Sentinel Landscape Committee will:

- Coordinate the overlapping priority areas in the vicinity of and where testing and training occur near or adjacent to major military installations, as that term is defined in G.S. 143-215.115, or other areas of strategic benefit to national defense.

- Assist landowners in improving their land to benefit their operations and enhance wildlife habitats while furthering the State's vested economic interest in preserving, maintaining, and sustaining land uses that are compatible with military activities at major military installations and National Guard facilities.

- Develop and implement programs and strategies that:
    - Protect working lands in the vicinity of and where testing and training occur near or adjacent to major military installations or other areas of strategic benefit to national defense,
    - Address restrictions that inhibit military testing and training, and
    - Forestall incompatible development in the vicinity of and where testing and training occur near or adjacent to military installations or other areas of strategic benefit to national defense.

Committee Members

North Carolina Sentinel Landscape Committee	
Chair – Steve Troxler	Commissioner of Agriculture
Vice Chair – Cameron Ingram	Executive Director, NC Wildlife Resources Commission
Secretary – Jeff Michael	Chief Deputy Secretary of Natural and Cultural Resources
Rick Long	Installation Coordinator, NC Department of Military and Veterans Affairs
Dr. Myron Floyd	Dean of the College of Natural Resources at N.C. State University
Chester Lowder	Representative of the North Carolina Sentinel Landscape Partnership

North Carolina Sentinel Landscape Committee Support Staff from NCDA&CS	
David Smith	Chief Deputy Commissioner
Evan Davis	Farmland Preservation Program Director
Corey Hoilman	Farmland Preservation Assistant Director
Jonathan Lanier	General Counsel
Janine McLawhorn	Paralegal
Nancy Richardson	Paralegal Assistant
Weston McCorkle	Agricultural Programs Specialist
Veronica Jamison	Farmland Preservation Office Manager
Anita Kennedy	Farmland Preservation Specialist
Sabrina Shaffer	Farmland Preservation Monitoring and Stewardship Coordinator
Allison Rodriguez	Farmland Preservation Budget Administrator
Sarah Weavil	Farmland Preservation Document Specialist

N.C. Department of Agriculture and Consumer Services Report

NCDA&CS Military Partnership Agricultural Conservation Easements since July 2016

Since the establishment of the Eastern North Carolina Sentinel Landscape in July 2016, the NCDA&CS Agricultural Development and Farmland Preservation Trust Fund (ADFPTF) has partnered with the U.S. Air Force, U.S. Marine Corps, and U.S. Navy to record conservation easements. NCDA&CS and the military services provided funds for easement purchases and transactional costs to permanently protect working farms and forests in military training priority zones. In some cases, the U.S. Department of Agriculture provided additional funds for easement purchases.

Military Partner	Acres Conserved	Easements Recorded	Counties
USAF-SJAFB	9,964.324	17	Bertie, Hyde, Tyrrell, Washington
USN-MCIEAST	2,214.591	3	Pamlico, Jones
Total	**12,178.915**	**20**	

The Working Lands Trust (WLT) worked with landowners, private partners, contractors, along with local, state, and federal staff to complete the projects. WLT is the easement holder for these conservation easements.

N.C. Military Affairs Commission Memorandum of Understanding

In a Memorandum of Understanding (MOU) with the N.C. Military Affairs Commission, the N.C. Department of Agriculture and Consumer Services is contracted to use a portion of the funds and will subcontract the remainder to the College of Natural Resources at N.C. State University and the North Carolina Foundation for Soil and Water Conservation to support activities in the Eastern North Carolina Sentinel Landscape (ENCSL). The total funding amount is $750,000 over five years.

Below is a general description of the activities and current expenditures and balances:

Purpose	Expenditures	Balance
Three positions within the NCDA&CS dedicated to outreach, technical assistance, legal services, and administrative support for Sentinel Landscape programs.	$224,160.89	$150,839.11
NCSU will expand coordination and improve shared communication to sustain linking military readiness, inclusion of working lands, and conservation through publications and landowner outreach.	$94,983.23	$105,016.77
North Carolina Foundation for Soil and Water Conservation will expand outreach efforts at the community level in the 33-county area of ENCSL.	$93,553.18	$81,446.82
Total	**$412,697.30**	**$337,302.70**

Priority Parcels in the ENCSL

The ADFPTF has been working extensively to engage willing landowners to place farms and forests under option for conservation easements and move priority parcels under contract. After contracting, funding partners work with qualified easement-holding entities, like county governments and nonprofit land trusts, to record conservation easements.

Beyond these recorded conservation easements, the ADFPTF is currently working with landowners to conserve and preserve **41,697 acres** in the ENCSL.

The ADFPTF has contracted **1,794.63 acres** of privately-owned farms and forests determined by military partners to be in areas vital to the training mission of the armed services. The total project value for these conservation easement contracts total nearly $8.5 million. The ADFPTF leveraged over $4.5 million in federal funds for these projects.

Through the work of ADFPTF field staff, the N.C. Foundation for Soil and Water Conservation, and other partners, there are **39,902 acres** of privately-owned farms and forests under option for conservation easements in the ENCSL.

Military Partnership Contracts

The following contracts are funded through the military services and the ADFPTF. These conservation easement projects total **1,794.63 acres**.

SJAFB Priority Area

County	Grant Recipient	Acres	SJAFB Funds	ADFPTF Funds	USDA Funds	Total Project Value
Hyde	WLT	291.60	$191,963.13	$191,963.13	-	$383,926.27
Hyde	WLT	651.00	$453,730.31	$453,830.31	$856,375.00	$1,763,935.63
Totals		**942.60**	**$645,693.44**	**$645,793.44**	**$856,375.00**	**$2,147,861.90**

MCIEAST Priority Area

County	Grant Recipient	Acres	MCIEAST Funds	ADFPTF Funds	USDA Funds	Total Project Value
Jones	WLT	138.68	$73,583.77	$97,483.77	-	$182,067.55
Jones	WLT	31.04	$21,344.81	$45,244.81	-	$77,589.62
Jones	WLT	197.30	$208,082.98	$231,982.98	-	$451,065.95
Onslow	WLT	485.01	$298,375.00	$317,175.00	-	$626,550.00
Totals		**852.03**	**$601,386.56**	**$691,886.56**	–	**$1,337,273.12**

N.C. Wildlife Resources Commission Report

Recovery and Sustainment Program (RASP)
The Red-Cockaded Woodpecker (RCW) Recovery and Sustainment Program (RASP) partnership has continued to promote this multi-agency collaboration. Along with the N.C. Wildlife Resources Commission (NCWRC), which leads the management effort, the partnership includes the U.S. Fish and Wildlife Service, the National Fish and Wildlife Foundation, Marine Corps Installations East at Marine Corps Base Camp Lejeune, the U.S. Department of the Navy and the Naval Facilities Engineering Command, Mid-Atlantic.

RASP continues to work towards habitat restoration goals:

1. Planting and timber harvests are continuing. Active timber harvests on < 500 acres of longleaf pine.
2. Year 4 field tour/examination was completed in October 2022 with representatives from NCWRC, USMC – Camp Lejeune, and NFWF
3. Bear Garden – completed 81 acres of prescribed burning. Following chemical site preparation, an additional 530 acres of longleaf pine and understory native plant restoration on the Bear Garden project was completed in Spring 2023.

Technical Guidance
Operations program staff with NCWRC's Wildlife Management Division continues to work within the ENCSL focal area to expand private land conservation. From September 2022 through June 2023, staff met with 43 private landowners and three local government agencies within the ENCSL focal area. These site visits resulted in management guidance being provided for 14,758 acres. This guidance targets the enhancement of habitat for various Species of Greatest Conservation Need (SGCN). Operations staff also presented at, assisted with coordination of, or co-hosted outreach events which reached over 350 constituents and conservation partners. At least half the attendees were landowners and partners within the ENCSL focal area.

County	Number of Site Visits	Recommendation Acres
Chowan	1	238
Perquimans	2	56
Hyde	1	1,946
Tyrrell	2	4,436
Edgecombe	2	525
Johnston	12	3,248
Wayne	1	50
Scotland	2	94
Harnett	2	88
Sampson	5	241
Hoke	1	43
Duplin	1	73
Wayne	2	150
Moore	6	408
Richmond	1	275
Sampson	6	251
Pender	1	4
Pasquotank	1	23
Johnston Local Gov't	3	2,900
Total	**52**	**14,758**

Operations program staff finalized four Wildlife Habitat Conservation Agreements (WHCA) within the ENCSL focal area. These agreements are required for landowners to sign up for property tax deferment through the Wildlife Conservation Land Program (WCLP). The following agreements were completed during 2022 for enrollment for the 2023 tax year. The total acreage impacted by WHCAs was 291 acres:

- Johnston County (39 acres)
- Moore County (33 acres)
- Perquimans County (25 acres)
- Wayne County (194 acres)

Angola Bay Game Land Resilience - Pender County

The Commission has continued to partner with The Nature Conservancy on an Emergency Coastal Resilience Fund grant from the National Fish and Wildlife Foundation (NFWF) to complete 7,500 acres of hydrologic restoration on Angola Bay Game Land in Pender County. This funding's intent is to enhance Pocosin wetland habitat and provide community flood resilience benefits to downstream communities. The communities near this project include Burgaw, Castle Hayne, and Wilmington.

1. This hydrology restoration project has progressed from the monitoring and design phase to the implementation phase.
2. NCWRC staff have initiated infrastructure installation, beginning with weir construction and completing the majority of the planned first-phase units. The aluminum flashboard riser water control structures have been installed.

3. Contracted road raising to facilitate water holding capacity while maintaining road drivability has been completed on at least a 4,700-foot section on the project's east side.
4. Additionally, NCWRC was invited to submit a full proposal for NFWF's America the Beautiful funding to help fully fund this project and fully implement the restoration of peatland Atlantic white cedar forest, plus the added benefit of habitat connectivity and public access. Recipients will receive award notifications in November 2023, and funding will be available in mid-2024.

Fieldwork with Species of Greatest Conservation Need (SGCN)

- **Sandhills chub (imperiled headwater fish)**
  The Sandhills chub (*Semotilus lumbee*) is an imperiled headwater fish that is geographically restricted in the Sandhills ecoregion in North and South Carolina and an SGCN in both states, and this project is focused on filling in knowledge gaps to support future conservation efforts. This multi-state project on Fort Bragg/Camp Mackall is a collaboration with SCDNR, DoD, and Coastal Carolina University (CCU).
    - Pilot work was completed to guide study design into understanding Sandhills chub movement.
    - Two MS students from CCU are marking individuals with PIT tags, monitoring fish travel distances in Gum Branch Creek and Aberdeen Creek, and collecting fin clips for the population genetics. Sampling events were completed in April and May of 2023.
    - So far, over 300 Sandhill Chubs have been PIT-tagged, and over 70 have been recaptured at least once.
    - Most recaptured fish have traveled less than 50 m from their original capture point, but a few individuals traveled 600-800 m. The length of most individuals has been between 50 and 200 mm.
    - In the fall of 2023, two additional streams in NC will be identified to complement this initial movement study and provide additional data.
- **Lake Mattamuskeet**
  NCWRC surveyed Lake Mattamuskeet in October for SGCN fish and mussels to establish a baseline.
    - Historically, Lake Mattamuskeet has had abundant submerged aquatic vegetation (SAV) but currently is at an all-time low due to several factors. Surveys found that fish diversity is low, and several species that utilize the SAV were absent. Mussel surveys found only one clam species, the Rangia clam, present in the lake. These surveys will continue in the future to document changes in species diversity and abundance.
- **Dwarf Wedgemussel augmentations**
  NCWRC released 250 federally endangered Dwarf Wedgemussels into Swift Creek in the Neuse River basin in November. These efforts were to augment the existing population in a section of Swift Creek in Johnston County. All mussels were tagged and will be monitored each year to determine growth, survival, and recruitment. More Dwarf Wedgemussels are planned for release in the future.

America the Beautiful proposal invitations

NCWRC has been invited to submit two full proposals to NFWF's America the Beautiful grant that will have direct benefit within the Eastern NC Sentinel Landscape with a deadline of July 20.

Announcements for projects selected for funding are expected in November 2023, with funding available in July 2024. One is for the Angola Bay Game land resiliency project described above.

The second project is focused on habitat restoration within Southeast Sentinel Landscapes to benefit Regional SGCN (RSGCN) across the southeast, including NC, SC, GA, and FL, in coordination with SERPPAS (Southeast Regional Partnership for Planning and Sustainability) and SECAS (Southeast Conservation Adaptation Strategy).

- Benefits to RSGCN will occur by restoring habitats within the Longleaf Pine ecosystem across Southeastern Sentinel Landscapes.
- Species ranges, habitats, and restoration needs overlap and represent regional priorities across the Southeastern states.
- Outcomes will be improved upland and wetland habitats for RSGCN, aquatic barrier, and connectivity data to drive future remediation efforts and improved ecosystem resilience for DoD facilities and surrounding communities.
- The project goal is to increase habitat restoration efforts for those terrestrial and aquatic species that inhabit the Longleaf Pine ecosystem. These at-risk species depend on targeted habitat restoration, or they continue to decline.

NC Wildlife Action Plan

- In 2022, an Addendum 2 was submitted to the US Fish and Wildlife Service (USFWS) proposing to add plant SGCN as a component of the state's natural communities, add a new natural community description for Piedmont and Coastal Plain Oak Forests, and provide habitat associations between plant SGCN and the natural communities described in the Plan.
- This proposal has been reviewed and approved by the USFWS.
- The Wildlife Commission will join 15 other state wildlife agencies that already include plants in their Wildlife Action Plans.

Recovering America's Wildlife Act (RAWA)

Recovering America's Wildlife Act (RAWA) is a bipartisan bill re-introduced this congressional session on the Senate floor and pending introduction in the House. NC has the potential to receive over $20 million annually to implement the NC Wildlife Action Plan (WAP) fully. The legislation would provide federal funding to fully implement Wildlife Action Plans in NC and all other states with a plan to keep "common species common" and off the federal species list.

- This website has additional information about RAWA (ncwildlife.org/RAWA) or search #RecoverWildlife to follow any updates during the current session.
- Senate Bill 1149 – 15 total co-sponsors, including NC Senator Tillis & NC Senator Budd
- The House is continuing to work on a draft of the bill to introduce as well for Committee consideration.
- The Association of Fish and Wildlife Agencies (AFWA) is working on a plan to develop an industry stakeholder working group for late 2023 summer. They are currently developing a list of industry partners and hosting regional summer field tours with Congressional staff focusing on Wildlife Action Plan-related projects.

N.C. Department of Natural and Cultural Resources

The Division of Land and Water Stewardship is part of the Department of Natural and Cultural Resources. The Division includes two programs focused on preserving North Carolina's unique environment – the North Carolina Land and Water Fund and the Natural Heritage Program. Both programs have contributed significantly to the Sentinel Landscape effort.

North Carolina Land and Water Fund Sentinel Landscapes Report (September 2022-August 2023)

North Carolina's Land and Water Fund (NCLWF) was established by the General Assembly in 1996 as a non-regulatory organization focusing on protecting and restoring the state's land and water resources. NCLWF awards grants to non-profit and governmental organizations to protect land for natural, historical, and cultural benefit, to limit encroachment on military installations, and to provide match for federal funds that buffer military installations, restore degraded streams, and develop and improve stormwater treatment technology.

At its funding meeting in September 2022, NCLWF awarded $12,109,075 to purchase property in fee or conservation easements on 8,373 acres in the ENCSL counties. In February 2023, NCLWF also awarded $5,346,825 for projects that reduce flood risks through the design, implementation, and preservation of nature-based infrastructure. Project details are listed below. When a project would directly benefit a particular installation, that is noted in the last column.

County	Organization	Project Name	Acres	Award Total	Program	Installation
Bertie	NC Wildlife Resources Commission	Sherron Tract - Gaskins Swamp	179	$125,500.00	Acquisition	USAF Seymour Johnson
Carteret	NC Coastal Land Trust	Weyerhaeuser - Newport River	1,400	$1,650,639.00	Acquisition	MCAS Cherry Point
Craven	NC Coastal Land Trust	Whitehurst Tract - Upper Broad Creek	190	$349,226.00	Acquisition	
Craven	NC Coastal Land Trust	Brice's Creek Nature Park	105	$301,505.00	Acquisition	
Harnett	The Conservation Fund	Heights of Cape Fear Timber Land - Daniels Creek	716	$1,524,823.00	Acquisition	
Harnett	Three Rivers Land Trust	Hunters Grant LLC - Cape Fear River	216	$1,953,596.00	Acquisition	
Hyde	NC Coastal Land Trust	Wolfpack Partnership - Spencer Bay	2,930	$1,973,360.00	Acquisition	USAF Seymour Johnson

County	Organization	Project Name	Acres	Award Total	Program	Installation
Johnston	Triangle Land Conservancy	Buffalo Creek Conservation Corridor	392	$1,003,243.00	Acquisition	
Moore	Three Rivers Land Trust	Addor Tract - Aberdeen Creek	55	$156,234.00	Acquisition	US Army Fort Bragg
Onslow	NC Coastal Federation	Odum Tract - Queens Creek	17	$332,381.00	Acquisition	USMC Camp Lejeune
Pamlico	NC Coastal Land Trust	Bate Land Company - Bay River	400	$1,268,150.00	Acquisition	
Pender	The Nature Conservancy	Willie Tract - Black River	115	$72,583.00	Acquisition	
Pender	The Nature Conservancy	Sleepy Creek Farms - Holly Shelter Game Land	1,625	$1,352,010.00	Acquisition	MCAS New River Air Station
Sampson	The Nature Conservancy	Wakestone Tract - Black River	33	$45,825.00	Acquisition	
Carteret	NC Coastal Federation	Newport River Restoration Initiative Phase II		$1,600,000.00	Flood Risk Reduction	
Jones	Town of Maysville	Maple Street Green Stormwater Improvement Project		$236,000.00	Flood Risk Reduction	
Lenoir	City of Kinston	Adkin Branch Flood Mitigation Phase I Construction		$2,000,000.00	Flood Risk Reduction	
Lenoir	NC State University	Caswell Farm Water Farming Demonstration and Research Project		$571,633.00	Flood Risk Reduction	
Onslow	NCSU Dept of Forestry and Environmental Resources	Hofmann Forest Water Farming Demonstration and Research Project		$383,191.00	Flood Risk Reduction	

County	Organization	Project Name	Acres	Award Total	Program	Installation
Wayne	The Conservation Fund	Cherry Hospital Flood print		$176,000.00	Flood Risk Reduction	
Wayne	Town of Seven Springs	Town of Seven Springs Restoration		$380,001.00	Flood Risk Reduction	

Natural Heritage Program Sentinel Landscapes Report (September 2022-August 2023)

North Carolina's Natural Heritage Program (NCNHP) conducts biological surveys of natural lands and maintains an inventory of rare species and high-quality examples of natural communities. Many of these inventories are conducted in cooperation with partners interested in setting aside land for conservation. This land use is compatible with maintaining the military mission footprint in North Carolina.

NCNHP encourages the conservation and stewardship of natural areas through the creation of Dedicated Nature Preserves (DNP) and Registered Heritage Areas (RHA) under the Nature Preserves Act (GS 143B-135.250-.272). Dedicated Nature Preserves are permanently protected through a legally binding agreement with DNCR to manage the land for the conservation of its natural heritage resources. State-owned land can only be removed from dedication upon approval of the governor and the Council of State. Registered Heritage Areas are agreements between the NCNHP and the landowner recognizing the natural heritage value of the land or water. Owners of Registered Heritage Areas sign a voluntary agreement with DNCR demonstrating their commitment to protecting the natural heritage resources of their property. These landowners may receive help with biological surveys and management recommendations.

During the past year, NCNHP has continued to lead the selection and nomination for registration or dedication of natural areas. No Dedicated Nature Preserves were established or expanded within the Sentinel Landscape Area during this past period. A total of 2,982 acres were newly designated as Registered Heritage Areas during this period. We are especially pleased private landowners have maintained their interest in signing agreements with the NC Department of Natural and Cultural Resources to protect and manage natural areas for their natural heritage resource values.

County	New Registered Heritage Areas	Acres	Owner
Beaufort	Eastern Gum Swamp	194	Weyerhaeuser
Bertie	Salmon Creek Swamp	120	Weyerhaeuser
Hyde	Pantego Swamp and Pocosins	311	Weyerhaeuser
Hyde	Upper Pungo River Wetlands	551	Weyerhaeuser
Moore	Voncanon Longleaf Pine Stand	1,463	130 of Chatham, LLC
Pender	Clarks Landing Coastal Goldenrod Site	213	Weyerhaeuser
Sampson	Cutgrass Bay	100	Weyerhaeuser
Sampson	South River Swamp Forest	30	Weyerhaeuser

The table below shows natural heritage surveys conducted by NCNHP to assist with land conservation activities in the Eastern North Carolina Sentinel Landscape from September 2022-August 2023. More than 3,900 acres were surveyed by NCNHP staff in the Sentinel Landscape area during this timeframe. Natural areas are listed in alphabetical order by county. Permission to visit the sites was received from landowners and land managers.

County	Natural Area	Partner Agency
Bertie	Chowan River Aquatic Habitat	Bertie County
Bertie	Point Comfort	North Carolina Coastal Land Trust
Carteret	Croatan National Forest	US Forest Service
Craven	Smith-Sugg Pocosin	North Carolina Coastal Land Trust
Dare	Cape Hatteras National Seashore	US National Park Service
Dare	Nags Head Woods	NC Division of Coastal Management
Hoke	Antioch Bay	The Nature Conservancy
Johnston	Neuse River Floodplain	NC Department of Adult Corrections
Pamlico	Pamlico Correctional Institution	NC Department of Adult Corrections
Pender	Currie Woods	Private landowner
Pender	Holly Shelter Game Land	NC Wildlife Resources Commission, Friends of Mountains-to-Sea Trail
Pender	Moore's Creek	US National Park Service
Richmond	Sandhills Game Land	NC Wildlife Resources Commission
Tyrrell	Buckridge Swamps	NC Division of Coastal Management

N.C. State University College of Natural Resources Report

Reporting Period – Sept 2, 2021 – August 31, 2023

Sentinel Landscapes are landscape-scale areas; they are the working or natural lands that protect and support the rural economy, the natural environment, outdoor recreation, and the national defense test and training mission of the military or state-owned National Guard installation or installations that anchor such landscapes. Sec.317. Sentinel Landscapes Partnership. (US Department of Defense, US Department of the Interior, and the US Department of Agricultural).

Research Efforts within the Eastern NC Sentinel Landscape

College of Natural Resources Forest Biomaterials

Co-hosted a symposium with DOD Special Operations Command that included a focus on the uses of industrial hemp as an alternative fiber for packaging (think protective packaging for airdrops), in bioenergy, and in supporting economic development. The CNR-DOD Symposium:

- Hosted the SEEDS – Sustainable Education and Economic Development Solutions Supercluster Symposium on campus Feb 10.
- Brought together a network of academic institutions, startups, mature organizations, government and NGOs, industry reps from agriculture, agroforestry, and aquaculture – focused on global supply chain solutions and advancing the US position in the bio-economy – food, textiles, bio-composite materials.
- Attended by US Special Forces Command, University of South Carolina, SC State University, Northern Arizona, University of Minnesota, Shaw University, University of Hawaii, and representatives from the hemp industry and forest and timberlands management.
- It was specific to DOD and CNR, each having a strong interest in researching uses of hemp in textiles and protective packaging in logistics and special operations activities.
- Next steps: develop a memorandum of agreement for coordination and future collaboration.

College of Natural Resources Center for Geospatial Analytics

Study: Predicting flood damage probability across the conterminous United States: Elyssa L Collins et al. 2022 Environ. Res. Lett. 17 034006.

A new study used artificial intelligence to predict where flood damage will likely happen in the continental United States. The study suggests that recent flood maps from the Federal Emergency Management Agency do not capture:

1. probability of flood damage outside the 100-year floodplain,
2. the full extent of flood risk/flood damage – including monetary damage, human injury, and loss of life – for more than a million square miles of land across the United States across a 14-year period (or 790,000 square miles greater than flood risk zones identified by FEMA's maps). Areas susceptible to flooding outside the floodplain do not have to abide by insurance, building code, and land-use requirements that could help protect people and property.

The model uses AI (computer learning) methods to create predictions. The model relates predictors – variables related to flood damage such as extreme precipitation, topography, and the relation of a home to a river – to a data set of flood damage reports from the National Oceanic

and Atmospheric Administration. The output of flood risk is readily available and offers a way of rapidly updating flood maps as conditions change or more information becomes available. The data used to train the models is publicly available reports from NOAA between December 2006 and May 2020. When comparing recent 2020 FEMA maps:

1. 84.5% of the damage reports evaluated were not within the agency's high-risk flood areas, and
2. 68.3% were located outside the high-risk floodplain, while 16.2% were in locations unmapped by FEMA.

One of the biggest drivers of flood damage risk was proximity to a stream, along with elevation and the average amount of extreme precipitation per year. The three Census regions with the highest probability were in the Southeast. Louisiana, Missouri, the District of Columbia, Florida, and Mississippi had the highest risk of any U.S. state or district in the continental United States. **North Carolina had three of the 30 most high-risk counties: Dare, Hyde, and Tyrrell**.

The findings of the study will be publicly accessible. Recently, the findings were shared with the NC Department of Environment Quality and Secretary Biser, the department that led North Carolina's State Climate Assessment Plan. As a proof of concept, the method efficiently and in real-time updates flood maps, and future modeling is expected to account for climate change. The model is expected to be used by policymakers involved in land-use planning and identifying vulnerable and underserved communities across the landscape.

College of Natural Resources Forestry Extension and Center for Geospatial Analytics

Currently, planning efforts are effectively focused on increasing compatible land use surrounding the bases through the utilization of conservation easements. The project, informally referred to as "the spaces between the bases," is focused on areas with overlapping military and conservation interests that are not detailed in existing plans as part of regional and state conservation planning efforts and may serve future needs well into 2060.

Envisioning future military and conservation landscapes: A core team of the NC Sentinel Landscapes Partnership has been guided by the College's Extension and Geospatial Team through an adaptive, iterative process of geospatial participatory modeling and facilitation. Using the FUTURES Urban Regional Environmental Simulation model, this project investigated the sensitivity of landscapes to support military readiness and conservation practices via alternative urbanization scenarios. By interpreting findings and analyzing tradeoffs between scenarios, summary tables were created based on metrics (e.g., projected growth in priority areas, the number of farms lost, and projected growth in headwater catchments) that were meaningful to participants. Stakeholders across the state are expected to be able to utilize both maps and summary tables as future decision-making and planning tools.

NC State University Coastal Resilience and Sustainability Initiative

Headed by Dr. Mary Watzin (former dean, NC State College of Natural Resources and NC Sentinel Landscape Committee representative), the **Coastal Resilience and Sustainability Initiative** is tasked by NC State's provost to build multidisciplinary teams that can address

pressing societal and ecological challenges facing coastal ecosystems and communities, and generate actionable solutions. While geographically focused on the coastline (resiliency and climate change), there may be opportunities to focus on areas of military readiness, given the location of MCIEAST and the Dare County Range. A list of forthcoming events and previous recordings is published on the website and available to the public.

"Military Installation Resilience" now carries a specific definition in the law: "the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that is necessary to maintain, improve, or rapidly reestablish installation mission assurance and mission-essential functions." Anticipated or unanticipated changes in environmental conditions are a term that clearly encompasses climate change. Cited: 10 USC- Section 101 (e) (8). https://crsreports.congress.gov/product/pdf/IN/IN11566

NC State Coastal Resilience and Sustainability Program – Announcements

1. Funding Opportunities (some of these repeat each year): **https://coastalresilience.ncsu.edu/funding**
2. New Director - NC State's College of Natural Resources has announced that effective Aug. 16, Dr. Erin Seekamp, a professor of Parks, Recreation, and Tourism Management and an extension tourism specialist with the College of Natural Resources, has been appointed Goodnight Distinguished Professor of Coastal Resilience and Sustainability, and director of the **NC State Coastal Resilience and Sustainability Program.**
3. Studying climate change through research, teaching, and engagement – **eight examples of problem-solving, including greening the rust-belt** (sustainability meets manufacturing).

College of Natural Resources Forestry and Environmental Resources and RTI International
(excerpt from Andrew Moore, Nov 2021, May 27, 2022)

On the heels of the COP26 deforestation pledge, with the international goal to end deforestation by 2030, climate and adaptation scientists are asking questions. Such as - what do the intervening years look like? How does the "pledge" ensure countries stay on track to achieve the goal by 2030? What agreements will be implemented with binding clauses or enforcement mechanisms to ensure accountability? Austin Baker, NC State associate professor of forest resource economics, acknowledges that the COP26 deforestation pledge is an important step forward for climate change mitigation. However, the effort raises concern regarding accountability measures and the potential for negative impact on timber harvesting and other active forest management practices, all of which are important in reducing the carbon footprint in the US and abroad.

A recent Biden executive order requires the planting of 1.2 billion trees across the country — enough to sequester an estimated 75 million metric tons of carbon. It also requires Federal agencies to set reforestation targets for 2030 and restore national forests devastated by wildfires and other climate change-fueled disturbances. Baker believes that the administration's goal is

achievable within a five- or ten-year timeframe with the right policies. For example, the administration can be more ambitious in its goal by implementing tax incentives and cost-sharing programs to support private landowners.

Baker and other researchers are collaborating on strategies to reduce greenhouse emissions at a significant scale. In an analysis published in the February 2022 issue of the *Journal of Forest Economics*, Baker and his colleagues modeled greenhouse gas emissions from the forestry and agriculture sectors under five different socioeconomic scenarios. Their finding: investing in forest management practices and tree planting initiatives on land that wasn't previously forested accounted for the largest share of greenhouse gas emission mitigation overall.

To that end, Baker, working with NC State researchers and other institutions, submitted a proposal recently to the U.S. Department of Agriculture to launch a program aimed at improving the accessibility of tree planting. A part of the program called RAPID Pine, Baker, and his colleagues plan to cost-share the planting and management of more than 120 million genetically improved pine seedlings across the southeastern U.S. by 2027, believing that the genetically improved pines could capture at least 1.8 times more carbon than trees planted two decades ago.

"Pine trees are the driving force of the forest products industry. But climate change is exacerbating droughts, wildfires, pests' outbreaks, and other disturbances that can cause increased tree mortality," Baker said. "Our genetically improved trees not only have the greater growing capacity, but they're also more resilient to disturbances. If we increase the resilience of our managed forests, they will sequester more carbon over time."

Projects Within the NC Sentinel Landscape

Resource Programming in Support of Military Readiness for Marine Corps Installations East (MCIEAST)
Development of online virtual landowner outreach and engagement in a six-county area – Onslow, Craven, Pamlico, Jones, Pender, and Carteret counties – is ongoing. The goal is to advance awareness and working knowledge of land management practices and make fiscal and technical expertise available to landowners and other professionals interested in landscape-scale economies and conservation.

Research Benefitting ENCSL

- **Projecting U.S. Forest Management, Market, and Carbon Sequestration Responses to a High-Impact Climate Scenario,** Dec. 28, 2022. Under more severe climate warming scenarios, the inventory of trees used for timber in the continental United States could decline by as much as 23% by 2100. The largest inventory losses would occur in two of the leading timber regions in the U.S., both in the South.

- **The Internet of Animals: what it is, what it could be,** May 30, 2023. The Internet of Animals (IoA) is a new model for understanding and managing life on Earth through digital knowledge and infrastructure. The internet has revolutionized global communication between humans. The IoA now extends information sharing beyond

humans to include animal life. The combined data sets on animals around the world enable a novel, emergent understanding of the needs and requirements of animals. At the same time, this IoA knowledge provides important guidance for humans to coexist with wild animals sustainably.

- **Economic Contribution of the Forest Sector in North Carolina.** Forestry plays a key role in the economy of North Carolina. The forest sector is a major contributor to North Carolina's economic well-being, supporting communities across all 100 counties. For 2020 forestry contributions in North Carolina by county, click here.

- **Challenges and opportunities for agroforestry practitioners to participate in state preferential property tax programs for agriculture and forestry.**

- **State Cost-Share Programs for Forest Landowners in the Southern United States: A Review.**

- **Educating Landowners on Forest-Based Alternative Income Streams in North Carolina: Program Evaluation and Lessons Learned**.

Publications Benefitting ENCSL

- The College of Natural Resources shares knowledge that ensures the sustainability of North Carolina's unique natural resources while supporting the economic prosperity of NC communities. The faculty, staff, students, and alumni are discovering and sharing real solutions to the world's grand challenges every day. **Major topics are Natural Resources, Forest Biomaterials Resources, Forestry and Environmental Resources, and Parks, Recreation, and Tourism Management Resources**.

- **Forests and Farms Are Good for North Carolina** provides outreach and evidence-based knowledge to landowners of Eastern forests and farms in proximity to military installations and ranges. The website is dedicated to landowners who want to learn about the variety of land management practices or new land management practices that have become available.

- **North Carolina's Forestry Present-Use Valuation (PUV) Property Tax Program.** North Carolina forested landowners who manage commercial forestland can qualify for property tax reductions through the state's forestry present-use property tax program. This document covers the major provisions of the law, forestry qualifications, and eligibility requirements for deferring property taxes through the forestry PUV program.

- **Management by Objectives: Successful Forest Planning.** Publication covers effective forest planning, including setting goals. Three owner profiles are presented.

- **What is Climate Smart Forestry? A Brief Overview.** Climate smart forestry is a targeted and long-term strategy to augment climate benefits from forests and the forest

sector in a manner that complements other forest-based goods and services.

- **Current Forest Carbon Markets at a Glance.** This short note provides a snapshot of the major forest carbon market developers in the United States with their features and requirements.

- **Financial Incentives for Forest Management.** This publication provides a brief overview of federal and state financial incentive programs for woodlot owners. Several of these programs provide cost sharing payments that reimburse landowners for various timber management activities. Other programs provide tax incentives, tax credits, and deductions for reforestation expenses.

- **An Introduction to Forest Certification**. This article presents a basic overview of forest certification, different certification systems, the process of certification, and emerging concepts in forest certification.

- **Voluntary conservation options for land protection in North Carolina**. This publication reviews the most common federal and state-level land conservation and protection assistance programs available for landowners.

- **An introduction to forest carbon offset markets.** Forest carbon is considered as a forest product that can be a viable alternative source of income for forest landowners. This note describes the forest carbon market today and explains the possible opportunity it represents for certain forest.

- **Protecting and Retaining Trees: A Guide for Municipalities and Counties in North Carolina.** This publication shares how communities across North Carolina can protect and retain trees.

- **Foodwise Flood Mitigation and Reduction Practices Budget Tools.** This publication provides a set of budget tools for the 10 most promising nature-based solutions (NBS) for flood reduction in Eastern North Carolina, which include common farm practices of no-till, cover crops, and tree planting to more complex NBS of wetland creation, water farming, and low-rise earthen berms and retention basins with flashboard risers.

- **Managing Longleaf Pine Straw.** This publication discusses the management of long-leaf pine straw as a revenue generation approach for private landowners.

- **Woodland Owners Notes newsletter.** Produced monthly by a NC State Extension Forestry team, this newsletter reaches several landowners within NC and in other states. It includes information about timely matters such as tips on tax season, upcoming trainings, or general learning events.

Forestry Webinars On-Demand

Webinars On-Demand offer great opportunities to learn about different forestry topics through recorded webinars featuring professionals in the field. Examples include:

- Forest Management Plans, Present Use Valuation, and Voluntary Agriculture Districts: What a Landowner Needs to Know
- Conserving Wildlife Through Forest Management

New Extension Forestry Employees

- **Area Specialized Extension Agent for Forestry – Nathan Gatlin**. Provides leadership to 50 western counties of North Carolina and is based out of Wilkes County.
- **Extension Associate Prescribed Fire & Fire Science– Elliot Nauert**. Provides leadership for the development, delivery, and evaluation of educational programming and materials with an emphasis on prescribed fire and fire science.
- **Extension Specialist: Forest Management – Jameson Boone.** Provides leadership for the development, delivery, and evaluation of educational programming and materials with an emphasis on multi-use forest management and silviculture for woodland owners.
- **Assistant Professor and Extension Specialist** – **Kurt Smith.** Provides leadership in designing, implementing, and evaluating public educational programs related to cost-share programs, income, and property taxation as well as programming related to land retention, including heirs' property, estate planning, and conservation easements, including programming of equitable access and participation.

College of Natural Resources: Forest Assets, Ownership, & Acreage

1. **Total CNR Acreage of Working and Natural Forests: 92,820**
   a. Recreational Forests
   b. Research Forests
   c. Living Labs
   d. Applied Research Resources

2. Recently secured Broad Creek (Craven County property)
   a. Approximately 138 acres
   b. Adjacent to the Upper Broad Creek
   c. 90% secured through 2 conservation easements.
   d. Self-sustaining working landscape
   e. College programmatic purposes: Teaching, Research, Demonstration
   f. Long-leaf and wetland area management

N.C. Sentinel Landscape Partnership Report

Sentinel Landscapes are landscape-scale areas; they are the working or natural lands that protect and support the rural economy, the natural environment, outdoor recreation, and the national defense test and training mission of the military or state-owned National Guard installation or installations that anchor such landscapes. Sec.317. Sentinel Landscapes Partnership. (US Department of Defense, US Department of the Interior, and the US Department of Agricultural).

National Sentinel Landscape Partnership

1. Finalized the **Memorandum of Understanding** between the Department of Defense, the Department of Interior, and the Department of Agriculture, establishing governing principles for the Sentinel Landscapes Partnership at the national level.

2. The Federal Coordinating Committee **selected three new Sentinel Landscapes** (as of February 2022, bringing the total of Sentinel Landscapes in the US to 10.
a. Camp Bullis (San Antonio Hill Country) Sentinel Landscape
b. Northwest Florida Sentinel Landscape
c. Southern Indiana Sentinel Landscape

In May 2022, the REPI Program Director announced ongoing consideration to add the proposed Virginia and South Carolina Sentinel Landscapes once the applicants complete the requested revisions.

3. The Federal Coordinating Committee was **expected in April 2022 to review the extension request for North Carolina's Sentinel Landscape boundary to include MOTSU and Camp Butner** and Brunswick, New Hanover, Durham, and Granville counties. As reported later in the year (at the June 22 Sentinel Landscape Committee meeting), the FCC delayed a review of the North Carolina and Georgia boundary "adjustment" request. The FCC plans to develop a form that the Sentinel Landscapes Coordinators can use to request an "adjustment." Once the form is announced, it will be completed, reviewed, and resubmitted based on the work group's effort and the letters of support in the initial submittal.

Eastern NC Sentinel Landscape Partnership

1. **Presentations**
   a. Jan 7, 2022 – presented about the Eastern NC Sentinel Landscape to the Cape Fear Council of Governments, MOTSU, and Col. Allen in partnership with the NC Department of Military and Veteran Affairs, NC Department of Natural and Cultural Resources, NC Department of Agriculture & Consumer Services, and the NC Wildlife Resources Commission.
   b. Feb 2, 2022 – presented to the City of Goldsboro about opportunities with the current REPI Challenge in partnership with Seymour Johnson AFB, Friends of the Mountains to Sea Trail, Conservation Fund, Environmental Defense Fund, and NC State University College of Natural Resources.
   c. Feb 15, 2022 – presented to the NC Commander's Council about the status of the current REPI Challenge in partnership with Seymour AFB, Fort Bragg and Camp Mackall, and Marine Corps Installations East, along with partners including the NC Coastal Federation, the Nature

Conservancy, NC Wildlife Resources Commission, NC State University College of Natural Resources Research Faculty, and NC Department of Agriculture & Consumer Services.
d. July 7, 2022 – Presentation to National Sentinel Landscape Partnership on the REPI Challenge award of $1.8M to the Eastern NC Sentinel Landscape Partnership, specifically to MCIEAST and Fort Bragg.
e. July 11, 2022 – Eastern NC Sentinel Landscape Resilience presentation to the SERPPAS Coastal Resilience Working Group and the Sentinel Landscape Working Group. Presentations from the Landscape Coordinators were designed to introduce the variety of resilient projects that occur in the region, particularly within Sentinel Landscapes.

2. 2022 National Sentinel Landscape Partnership Accomplishment Effort

The Eastern NC Sentinel Landscape Coordinator, along with partners such as the NC Land & Water Fund, NC Wildlife Resources Commission, NC Forest Service, NC Agricultural Development and Farmland Preservation Trust Fund, US Fish & Wildlife Service, The Nature Conservancy, the NC Foundation for Soil and Water Conservation, the Sandhills Prescribed Burn Association, and Conservation Legacy, either assisted in the collection and submittal of FY 21 data or the development of Sentinel Landscapes Success Stories for the 2022 REPI Program Accomplishments Report submitted annually to Congress. The following criteria designate the type of data collected.

- **Committed Funds:** the total amount of funding committed to projects within the ENCSL (FY21). Data is stratified by an organization to capture organizational investment, as well as the contributions of partners. Relevant projects include those that support military readiness, agricultural productivity, biodiversity, natural resources, water quality and quantity, access to outdoor recreation, or goals identified within a sentinel landscape's strategic plan.
- **Acres Enrolled:** list by organizational contribution, the total number of acres within each Sentinel Landscape enrolled in land-management programs administered by the organization. A property is recognized as enrolled if (1) its respective landowner voluntarily participates in a federal or state land-management program that provides financial or technical assistance to promote sustainable agricultural practices, restore imperiled species and their habitat, or preserve critical natural resources, or (2) if a landowner or an organization receives a federal or state grant to conduct a conservation project on said property.
- **Acres Protected:** land acquisitions (fee simple or easement) that have completed the due diligence and closing actions necessary to obtain a real estate interest.

Success Stories: capture success stories of various organizations, a description of the project, the outcomes, and the processes that lend themselves to collaborative work through narrative and pictures. Submitted seven success stories for 2021.

3. FY22 REPI Challenge Grant

The Eastern NC Sentinel Landscape was awarded $1.8M in June 2022 to advance resiliency across the Sentinel Landscape area. In September 2021, the Eastern NC Sentinel Landscape Coordinator began work with a core team and several partners to coordinate the development of the FY22 REPI Challenge with projected actions and requests for financial support that included match sums plus one. In addition to the ENCSL Coordinator, the core team is comprised of Fort Bragg and MCIEAST, along with the Nature Conservancy, NC Wildlife Resources Commission, NC State University, the Coastal Federation, and the NC Department of Agriculture and Consumer Services. Resilience measures will be provided by:

a) establishing three living shorelines at MCIEAST in response to lessening the impacts of increasing storm surge, long-term damage, and erosion (funds for living shoreline and other coastal projects will be applied to the National Fish and Wildlife Foundation Coastal Program);

b) lessening fuel loads on public and private lands in the Sandhills region near Fort Bragg through strategic prescribed fire management;

c) strategically increasing pervious surfaces and open space that can mitigate flood drainage resulting from urbanization and impervious surfaces that are accelerating drainage and runoff near installations and the communities that serve them at MCIEAST; and

d) conducting research examining climate change's role on RCW populations at Fort Bragg.

4. FY23 REPI Challenge

The timeline for REPI Challenge was more immediate than the previous year's and was expected to follow a June to September timeline. North Carolina was not required to submit a pre-proposal since the submittal's purpose is to continue advancing resiliency across the Sentinel Landscape area. The FY23 request was to focus on Seymour Johnson Air Force Base. Areas of focus include Johnston and Wayne counties to address riverine flooding, partly through securing ag conservation easements in the uplands and resiliency easements in the floodplains. Instead of parcel by parcel, there existed opportunities to secure easements in priority areas using a mosaic approach. Some sections of Wayne County were also included. The potential to connect outdoor recreation trail access as part of the project was noted. The request was accompanied by a match plus one. The Eastern NC Sentinel Landscape Coordinator facilitated the development of the proposal with a core team of experts comprised of SJAFB representatives, NC Agricultural Development and Farmland Preservation Trust Fund, Triangle Land Conservancy, Wayne and Johnson Soil and Water Conservation Districts, and the Mountains to Sea Trail Organization. The new Climate Resilience and Adaptation Coordinator, housed at NC Coastal Federation, provided insights on resilience measures.

5. Seymour Johnson AFB Riverine Resilience Workshop

Along with the FY23 REPI Challenge, SJAFB partnered with an external Air Force planning team to develop a facilitated workshop to identify priority areas of riverine flooding, identify priority areas of mutual interests where riverine flooding could be addressed or mitigated, and determine immediate and long-strategies for addressing those areas of mutual interests. The two-day workshop was held in September 2022 with one expected outcome to be an advisory committee that can work

with SJAFB to help advocate for resources, and where possible, reduce the amount of flooding to avoid future repairs and damages, and additional restoration costs.

6. **Climate Adaptation and Resilience Coordinator** – This pilot project will operate for three years (began in March 2022), fully funded, and currently housed at the NC Coastal Federation. A Coordinator was hired to develop a Sentinel Landscape Climate and Adaptation Plan that will fold into the overall Eastern NC Sentinel Landscape Strategic Plan, accompanied by an annual implementation plan. Chris Baillie will direct 25% of his effort to the NC Coastal Federation projects and 75% to develop a Sentinel Landscape Climate and Adaptation Plan. The pilot will be assessed for transferability across the other nine Sentinel Landscapes and its current value to the ENCSL.
* *Climate resilience is generally defined as the adaptive capacity for a system to absorb stresses and maintain function in the face of external stresses imposed upon it by climate disruptions. ...*

National Activities

- The LLSF contributes to America's Longleaf Restoration Initiative (ALRI). This strategic plan for longleaf aims to restore 8 million acres of longleaf habitat over a period of time. Reduced to only about 5 percent of its historical range, restoring longleaf forests on state- and privately-owned lands around military installations will contribute to US military readiness by providing compatible land use near installations while increasing habitat for at-risk species, and thereby reducing the potential for these installations to become islands of biodiversity. **Significant landscape areas considered in North Carolina include the Onslow Bight, the Sandhills, and Bladen Lakes.**

- The American Farmland Trust (AFT), a national nonprofit advocating for the preservation of farmland across the country, released a comprehensive study on farmland loss in the United States. The report, "Farms Under Threat: The State of the States," found that between 2001 and 2016, 11 million acres of agricultural land were paved over, fragmented, or converted to uses that jeopardize agriculture. In North Carolina, 732,000 acres of agricultural land were converted during that same period. Despite North Carolina ranking 30th in the nation in total agricultural acreage, this is the second-greatest number of agricultural land acres lost compared to all other states. The rapid change in land use from pervious to impervious surfaces decreases the availability of farm products, the land's and rivers' ability to absorb rainwater and runoff without overwhelming downriver communities. Farms Under Threat 2040: Choosing an Abundant Future projects three possible scenarios of farmland loss in North Carolina between 2016 and 2040: business as usual (loss of 1,197,300 acres), runaway sprawl (loss of 1,678,100 acres), and better-built cities (loss of 661,500 acres).

- **National Sentinel Landscape Workshops**
  - **Sept 2022: Land Trust Rally** (New Orleans) Sentinel Landscape Coordinators attended sessions of the Land Trust Rally in New Orleans and the one-day workshop with the REPI staff and partners.

- November 2022: Attended **Fort Huachuca Sentinel Landscape (Sierra Vista, AZ)**. Representing NC – Mary Lou Addor (Eastern NC SL Partnership Coordinator) Chris Baillie (NC Resilience/Climate Adaptation Coordinator), and Julius George (NRCS in NC). Other attendees included the Sentinel Landscape Coordinators, Federal Coordinating Committee members, Arizona stakeholders, and other interested parties. Focus was on wildfire and water resources management within a Sentinel landscape, which included demonstrations, presentations of short and long-term accomplishments.
- **June 2023:** Attended **the Camp Ripley workshop near Baxter, Minnesota**. Representing NC – Mary Lou Addor (Eastern NC SL Partnership Coordinator), Chris Baillie (NC Resilience/Climate Adaptation Coordinator), and Julius George (NRCS in NC). The event was attended by other Sentinel Landscape Coordinators, Federal Coordinating Committee members, representatives from various federal and state agencies, including military partners. Of note, Camp Ripley, Minnesota Army National Guard, was again, the **recipient of the Secretary of Defense Environmental Awards for its achievements in Natural Resources Conservation.**
- **July 2023: Department of Defense Climate Resilience Conference** in St. Louis, Mo. Representing NC – Mary Lou Addor (Eastern NC SL Partnership Coordinator), Chris Baillie (NC Resilience/Climate Adaptation Coordinator), Carmen Lombardo and Martin Korenek (MCIEAST), Denise Evans (SJAFB), Bill Cary (Brooks & Pierce), Michelle Lovejoy (Environmental Defense Fund), and Todd Miller (NC Coastal Federation). The event was attended by other Sentinel Landscape Coordinators, Federal Coordinating Committee members, and reps from various federal and state agencies.

- **REPI National Reporting Effort.** The REPI Office is initiating a new reporting approach to be developed by TAMU. The collection effort began late January 2023 to secure information on the data parameters mostly of federal, state, and some private partners.

Eastern NC Sentinel Landscape Partnership

2023 Partnership Meetings

- Partnership Meetings (in person): Jan. 24, Feb. 21, March 16, May 18, Sept. 14, Oct. 19, Nov. 9.
- Partnership Webinars (online only): Jan. 27, Feb. 27, March 17, May 22, Sept. 18, Oct. 23, Nov. 13.
- The 2024 schedule will be posted by October 2023.
- Finalized Partnership MOU through 2026
- Established advisory group to support strategic planning efforts and bring back concepts to principals.
- New partnership website expected to launch by early September.
- Drafting boundary extension request with small group of partners for 2023 submittal (in process).

Presentations

- Aug. 26, 2022: presentation to Congressional staffers about the Eastern NC Sentinel Landscape, along with presentations on the value of prescribed fire within the longleaf ecosystem supported by a peer-to-peer working network. Part of a three-day briefing tour provided by the Colleges of Ag and Life Sciences and Natural Resources, connecting research, teaching, and outreach to policymakers.
- Sept. 20 & 21, 2022: presentation and facilitation of the Seymour Johnson AFB workshop to multiple state, county, and local partners.
- Sept. 27, 2022: Best Practices in Landscape Management, Training, and Encroachment Panel at the Association of Defense Communities, ENCSL Panel. Another panel session is to be convened in September 2023.
- Oct. 2022: Engaging Landowners in Land Management Tools, Extension Conference – Winston-Salem, NC.
- Dec. 2022: Identifying Off-Base Opportunities to Advance Military Installation Resilience through Nature-Based Solutions: Examples from Hyde County, North Carolina, presented to the Coastal & Estuarine Summit – New Orleans, La.
- Jan. 2023: Current Climate Resilience Activities within the ENCSL and Scaling up Resilience and Climate Adaptation within the ENCSL. Sentinel Landscape Climate Resilience Summit – Jekyll Island, Ga.
- Feb. 2023: Military Partnership Funding Opportunities, North Carolina Resilient Communities Funding Forum – Greenville, NC.
- June 7, 2023: presentation of the Eastern NC Sentinel Landscape to NC State faculty, staff, and students conducting a tour of eastern NC at the Hoffmann Forest.
- July 2023: Building Resilience Capacity Across Sentinel Landscapes (ENCSL-Focused Panel). DoD Climate Resilience Workshop – St. Louis, Mo.
- Aug. 9, 2023: presentation of the Eastern NC Sentinel Landscape to the NC Commander's Council.

Workshops

- Sept. 20 and 21, 2022: supported the development and implementation of **Seymour Johnson AFB Flood Resilience Workshop** attended by several partners who will help build flood resilience capacity in Johnston and Wayne counties. A workshop report was distributed to Johnston and Wayne county partners during an April online meeting. Since April, the Johnson County Partnership met again in May and will meet to develop future activities and assessments and will meet again in September/October; Wayne County partners are planning to meet in September.
- Sept. 27, 2022: **Association of Defense Communities Raleigh Event,** hosted with the NC Department of Military and Veterans Affairs. Best Practices in Landscape Management and Training and Encroachment Panel, led by Addor in conjunction with the REPI Office, Fort Bragg, and the Nature Conservancy. Another panel session will be convened in Sept. 2023 with the Association of Defense Communities.
- Jan. 30 – Feb. 1, 2023: **Southeast Sentinel Landscapes Climate Resilience Summit** hosted by the Southeast Regional Partnership for Planning and Sustainability (SERPPAS) with the purpose of advancing climate resilience planning and implementation within the Sentinel Landscapes. Representing North Carolina: Mary Lou Addor (Eastern NC Sentinel

Landscape Partnership Coordinator), Chris Baillie (Climate Resilience Coordinator), Denise Evans (Seymour Johnson Air Force Base), Todd Miller (NC Coastal Federation), and Martin Korenek (MCIEAST). A major outcome of the Summit is developing or expanding where feasible, near-term projects along with plans for landscape-scale efforts. North Carolina provided a panel of case studies to share examples of climate resilience efforts ongoing in NC. In addition, breakout group discussions were conducted to consider climate resilience activities for NC. Summit results were presented Feb. 21 to the Partnership.

Grants Processes Developed and/or Submitted for ENCSL Efforts

- **FY23 REPI Challenge Full Proposal.** Connecting Military Readiness, Working Lands, and Nature-Based Infrastructure Across the Landscape Extending to Seymour Johnson Air Force Base. Partners – Agricultural Development and Farmland Preservation Trust Fund, Triangle Land Conservancy, Soil and Water Conservation Districts, and Mountains to Sea Trail. Focus is on securing compatible land use in the Upper Neuse region, particularly Johnston and Wayne counties. The rapid land use change in this area from pervious to impervious surfaces has decreased the ability of land and rivers to absorb rainwater and riverine runoff without overwhelming downriver communities including Seymour Johnson Air Force Base (based on feedback received, resubmitted in FY24).
- **FY 24 REPI Pre-Challenge Proposal.** Connecting Military Readiness, Working Lands, and Nature-Based Infrastructure Across the Landscape Extending to Seymour Johnson Air Force Base. Partners – Agricultural Development and Farmland Preservation Trust Fund, Triangle Land Conservancy, Soil and Water Conservation Districts, and NC State College of Natural Resources provided support to the development of the Challenge Proposal. Focus is on securing compatible land use, whether securing working or climate resilience parcels in the Upper Neuse region, particularly Johnston and Wayne counties. The rapid land use change in this area from pervious to impervious surfaces has decreased the ability of land and rivers to absorb rainwater and riverine runoff without overwhelming downriver communities including Seymour Johnson Air Force Base. Not awarded.
- **NWFW America the Beautiful Challenge**:
  - NC Foundation for Soil and Water Conservation: Advancing Community-Led Resilience Initiatives and Co-Designed Conservation Practices in a Sentinel Landscape.
  - NC Wildlife Resources Commission: Restoring Longleaf Pine Uplands, Ephemeral Wetlands, and Aquatic Connectivity to Benefit Regional Species of Greatest Conservation Need across Southeastern Sentinel Landscapes.
  - NC Forest Service: Building Resilient Connections for Eastern North Carolina's Ecosystems, Communities, and Woodland Owners.
- **National Fish and Wildlife Foundation's National Coastal Resilience Fund**:
  - Community Capacity Building and Planning in Vulnerable Communities of the South Atlantic Salt Marsh Initiative.
  - Building Ecological, Community, and Military Resilience through Spoil Island Restoration in Bogue Sound, North Carolina.
- **Land and Water Conservation Fund & REPI Match**

  - Exploring proposal for submittal
- **USDA NRCS Regional Conservation Partnership Program:**
  - NC Carolina Coastal Federation: Restoring Natural Hydrology and Flora on Highly Altered Timberlands-Carteret County, NC.
  - Multiple partners: Building a Working Lands Economies from the Foundation Up.

Noted Partnership Efforts Near Installations:

- **North Carolina Sandhills** (The Nature Conservancy): Awarded $392,200 with a match of $234,400 to plant 735 acres of longleaf pine and manage 60,000 acres of existing longleaf pine habitat within the Sandhills region of North Carolina. Partners will build prescribed burning capacity during fire trainings, utilize seasonal burn crews to complete prescribed burning and mid-story control and other management on lands around Fort Bragg and the Uwharrie National Forest, improving habitat for Bachman's sparrow, red-cockaded woodpecker, and northern bobwhite.

- **Onslow Bight Landscape** (The Nature Conservancy): Awarded $499,990 with match of $655,000 to plant more than 1,600 acres of longleaf pine and improve management of more than 65,000 acres of longleaf pine habitat on public and private lands in the Onslow Bight region of eastern North Carolina. The project will increase prescribed burning through a burn crew to assist partners with longleaf management, complete aerial ignition burns, and provide certified prescribed fire training for fire managers and forest management training for landowners.

Meeting Summaries

- 09-07-2022 meeting:

Committee members present:

- Weston McCorkle, NC Department of Agriculture & Consumer Services
- Rick Long, Interim Assistant Secretary, NC Department of Military and Veterans Affairs
- Jeff Michael, Deputy Secretary, NC Department of Natural and Cultural Resources
- Kyle Briggs, Executive Director, NC Wildlife Resources Commission
- Robert Bardon, College of Natural Resources, NCSU
- Chester Lowder, Sentinel Landscape Partnership Liaison

Other Attendees: Janine McLawhorn, Nancy Richardson, Jonathan Lanier, Mary Lou Addor, Sabrina Shaffer, Veronica Jamison, David Smith, Joe Austin, Rodney Woolard, Tom Potter, Christian Vose, Sarah Weavil, Marty Korenek, Denise Evans, and Steve Woodson.
Weston McCorkle was sitting in for Commissioner Steve Troxler due to his recovery from surgery. Weston McCorkle completed the roll call and approved the June 22, 2022, meeting minutes. Cameron Ingram moved to approve, Chester Lowder seconded the meeting minutes.

Reading of Ethics Reminder ETHICS REMINDER: Under the State Government Ethics Act, the chairman is required to remind all members of their duty to avoid conflicts of interest or appearances of conflicts of interest. If you have any conflict or appearance of conflict of interest with respect to any item on the agenda, please state this for the record and refrain from inappropriate participation on that item.

- Evan Davis reported for the North Carolina Department of Agriculture & Consumer Services. Davis gave update of current contracts which total 3,638.95 acres. Davis then reported on the Military Partnership Agricultural Conservation Easements since July 2016, which total 9,477.435 acres and 16 easements recorded. Davis reported the balance of the MOU with NCMAC and the upcoming $10 million request. Davis then went on to report on the new position in ADFP Program Coordinator I that is open at this time.

- Rick Long is the new point of contact for the Military Affairs Commission. He reported that Ariel Aponte moved over to work for Elizabeth State University. Long reported on the additional information and efforts such as the Governor's Office Senior Advisors, Energy Resiliency Efforts, NC Defense Summit, NC Hall of Firsts nomination window, Timbermill Wind Project (onshore) public hearing, childcare issues, the Coast Guard's birthday and galley renaming event, session legislative efforts, and the Sentinel Landscape.

- Cameron Ingram reported on the North Carolina Wildlife Resource Commission with a total of 18 landowners adding up to 2,532 acres in the open toolbox area of Sentinel Landscape area. Ingram reported on the ongoing DoD Coastal Club Fish Conservation. He also stated they started working with MOTSU and a recovery plan with the new season coming. Ingram reported that they are working with the College of Natural Resources and the assistance of forestry land retention.

- Jeff Michaels reports on the upcoming annual report for 2021-2022. He reports on the legislative report stating the proposed $20 million and over 20,000 acres for the water fund, the other big Natural Heritage Program with conservation partnerships. He spoke on their ranking systems. He also spoke on the inventory of 6,300 acres in the Sentinel Landscapes with state land & water fund. He spoke on the 195 applications this time and last year only having 108. He also gave a projected budget for this upcoming year.

- Chester Lowder gave his update saying he was hopeful with a positive partnership with dialogue.

- Mary Lou gave her report on the Long Leaf pine.

- Evan Davis gave an update on the loss of farmland in NC at a rapid rate. He reported on the AFT land study that was projected for 2040.

- McCorkle noted that Agriculture was the number one economic driver in NC, the military was second, and forestry was third. He stated he was happy to be a part of the efforts with providing conservation efforts throughout the state.

- Meeting is adjourned 2:18 pm.

- 12-13-2022 meeting:

Committee members present:

- Weston McCorkle, NC Department of Agriculture & Consumer Services
- Rick Long, Assistant Secretary, NC Department of Military and Veterans Affairs
- Brian McRae, Executive Director, NC Wildlife Resources Commission
- Dr. Myron F. Floyd, Dean, College of Natural Resources, NCSU
- Chester Lowder, Sentinel Landscape Partnership Liaison

- **Other Attendees**: Joe Austin, Edward Davis, Evan Davis, Corey Hoilman, Veronica Jamison, Anita Kennedy, Chester Lowder, Janine McLawhorn, Allison Rodriguez, Nancy Richardson, Sabrina Shaffer, Scott Shoulars, David Smith, Sarah Weavil, Rodney Woolard, Christian Vose, Kelly Jackson, Mary Lou Addor, Chris Bailie, Rhonda Murray, Marty Korenek, Steve Woodson, John Shaw, Bob

Bardon, Brian Loadholt, Stephen Caple, Carmen Lombardo, Will Robinson, Tom Potter, Brian Pierce, Denise Evans, Julius George, and Michelle Lovejoy.

- **Reading of Ethics Reminder** ETHICS REMINDER: Under the State Government Ethics Act, the chairman is required to remind all members of their duty to avoid conflicts of interest or appearances of conflicts of interest. If you have any conflict or appearance of conflict of interest with respect to any item on the agenda, please state this for the record and refrain from inappropriate participation on that item.

- Minutes from the September 7, 2022, meeting was approved unanimously. Rick Long made the motion, and Chester Lowder seconded.

- Evan Davis reported on current military contracts: G&H Properties and Armstrong Farm Phase 1 and 2 with USAF-SJAFB, and McCotter Farm Phase 1 with NAVY/MCIEAST. These easement total over 2,160.47 acres. He reviewed the MOU with North Carolina Military Affairs Commission (NCMAC) and the expenses used since November 2022. He acknowledged Kelly Jackson, Executive Director of the NCMAC, and expressed appreciation for their support of the department and partners in their efforts in the Eastern North Carolina Sentinel Landscape. He reviewed the new FY 2023 RCPP renewal proposal with NC Sentinel Landscapes High Priority Protect Program. This project was awarded $7 million for easement acquisition and will have the same priority areas and parcel criteria as the first grant from 2018. He also introduced Anita Kennedy to the group as the new Farmland Preservation Specialist. He reported the division is now fully staffed.

- Rick Long reported for the NC Department of Military and Veterans Affairs. He introduced Kelly Jackson, Executive Director of the NC Military Affairs Commission.

- A report was sent to the committee for the NC Department of Natural and Cultural Resources: Due to a scheduling conflict, Jeff Michael and Will Summer cannot be here today, but would like to share the following on behalf of the Department of Natural and Cultural Resources and the North Carolina Land and Water Fund. Since the last meeting of this group, the NCLWF Board has awarded $70.4 million in grants for the 2022 cycle, including 27,157 acres protected. Most of those acres will provide public access for hiking, hunting, fishing, and other recreational opportunities, including over 10,000 acres to be added to NC Wildlife Resources Commission game lands, 5,000 acres to NC State Parks, and 7,000 acres in local parks and preserves. Over $5.5 million was awarded to projects directly connected to protecting the military mission near MCAS New River Air Station, MCAS Cherry Point, US Army Fort Bragg, USAF Seymour Johnson, and

USMC Camp Lejeune. And over $12.3 million was awarded to 15 acquisition projects protecting 8,300 acres in ENCSL counties. Applications for the next grant cycle will be released on December 15.

- David Smith asked if the North Carolina Department of Agriculture could work with others in the group to get a combined map showing parcels protected by participating state agencies. Evan Davis said he would work with Chrisitan Vose in Emergency Programs to start that project.

- Brian McRae with the NC Wildlife Resources Commission reported on his upcoming protection of lands: 500 acres with active timber harvests and Bear Garden longleaf pine planting on over 500 acres. In Pender County, almost 300 acres will be added to the Cape Fear River Wetlands Game Land, and 45 more in Scotland will be added to Sandhills Game Land.

- Dr. Myron Floyd, Dean of the College of Natural Resources, reported on their new website under development, Forest and Farms are Good for North Carolina. A number of agencies and organizations within North Carolina, including the military, work together to support North Carolina's vast network of diverse private land managers. The new website is designed to accelerate access to landowners interested in technical, fiscal, and/or peer support that can help them achieve their landowner objectives. Forests and Farms Are Good for North Carolina is dedicated to landowners who want to learn about the variety of land management practices or new land management practices that have become available and will provide outreach and evidence-based knowledge to landowners of eastern forests and farms in proximity to military installations and ranges.

  The site is supported by funding from the United States Marine Corps Installation East. It is still under development with expanded outreach to critical partners and to include additional and specific content while providing a more user-friendly presentation in terms of infographics and other visuals. To access the site, visit https://ncworkinglands.ces.ncsu.edu/about-ncworkinglandssite. For feedback and interest, contact Mary Lou Addor at mladdor@ncsu.edu

  New positions of interest within their program include:
  - **Extension Associate Prescribed Fire & Fire Science (Hired) – Elliot Nauert**

  Provides leadership for the development, delivery, and evaluation of educational programming and materials with an emphasis on prescribed fire and fire science.
  - **Extension Specialist: Forest Management**

  Provides leadership for the development, delivery, and evaluation of educational programming and materials with an emphasis on multi-use forest management and silviculture for woodland owners.

- **Assistant Professor and Extension Specialist**
  Provides leadership in designing, implementing, and evaluating public educational programs related to cost-share programs, income, and property taxation; and programming related to land retention, including heirs' property, estate planning, and conservation easements, including programming of equitable access and participation.

- Chester Lowder invited Mary Lou Addor to present the Sentinel Landscape Partnership Report:

  - **National Sentinel Landscape Workshops**
    Attended workshop in Sierra Vista, Az with the Fort Huachuca Sentinel Landscape. Representing NC was Mary Lou Addor (Eastern NC SL Coordinator), Chris Baillie (NC Resilience/Climate Adaptation Coordinator), and Julius George (NRCS in NC). Other attendees included the Sentinel Landscape Coordinators, members of the Federal Coordinating Committee, Arizona stakeholders, and other interested parties. The focus was on strategic efforts within the Fort Huachuca landscape, demonstrations, as well as short and long-term accomplishments. The next workshop will be at Camp Ripley in June 2023. If others are interested in this trip, they were asked to email Lou. They will need to cover expenses and currently have not heard what additional funding Sentinel Landscapes can provide.

  - **National Reporting Effort**
    The REPI Office is initiating a new reporting approach to be initiated by TAMU. Although the effort is expected to start in January 2023, Lou will secure information on the data parameters prior so that partners have a sense of pending requests. Once the parameters are known, an email will be distributed to the various partners from which this request will seek data. This request is typically limited to federal, state, and private partners though may be expanded.

  - **FY23 REPI Challenge (awaiting formal announcement – January 2023)**
    Mary Lou said there will be a very short turnaround from FY22 REPI Challenge award, which was mid-June - September 12, 2022. The focus will continue to be the connections among military readiness, working lands, and nature-based infrastructure across the landscape extending to Seymour Johnson Air Force Base. Partners include the Agricultural Development and Farmland Preservation Trust Fund, Triangle Land Conservancy, Soil and Water Conservation Districts, Friends of the Mountains to Sea Trail. Other partners including NC Coastal Federation and NC State College of Natural Resources are providing support to the development of the FY23 REPI Challenge Proposal. The focus is on securing a mosaic of working lands and climate resilience parcels in the Upper Neuse region, particularly Johnston and Wayne counties. The rapid land use change in this area (and Wake County), from pervious to impervious surfaces has decreased the lands and rivers' ability to

absorb rainwater and riverine runoff without overwhelming downriver communities, including Seymour Johnson Air Force Base.

- Weston McCorkle appreciated everyone's hard work on the joint efforts in the Eastern North Carolina Sentinel Landscape. He asked if there were any public comments. He said the next meeting would be in early February 2023.

- Weston McCorkle asked for a motion to close the meeting. Rick Long made the motion, and Brian McRae seconded. The meeting was adjourned at 2:05 pm.

- 02-14-2023 meeting:

Committee members present:

- Weston McCorkle, NC Department of Agriculture & Consumer Services
- Rick Long, Assistant Secretary, NC Department of Military and Veterans Affairs
- Jeff Michael, Deputy Secretary, NC Department of Natural and Cultural Resources
- Brian McRae, Deputy Director of Operations, NC Wildlife Resources Commission
- Dr. Robert Bardon, Associate Dean of Extension, College of Natural Resources, NCSU
- Chester Lowder, Sentinel Landscape Partnership Liaison

- **Other Attendees**: Joe Austin, Edward Davis, Evan Davis, Corey Hoilman, Veronica Jamison, Anita Kennedy, Jon Lanier, Janine McLawhorn, Allison Rodriguez, Nancy Richardson, Scott Shoulars, David Smith, Sarah Weavil, Rodney Woolard, Christian Vose, Kelly Jackson, Mary Lou Addor, Chris Baillie, Rhonda Murray, Marty Korenek, Steve Woodson, John Shaw, Tom Potter, Denise Evans, Michelle Lovejoy, Mikey Fulk, Hans Winkler, Jim Rupkalvis, Jason Rose, Ethan Brogden, Brian Williams, Brian Joyner, Amanda Sand, Dewitt Hardee, Neil Oakley, Will Best, Addie Thornton, and Emma Hughes.

- **Reading of Ethics Reminder** ETHICS REMINDER: Under the State Government Ethics Act, the chairman is required to remind all members of their duty to avoid conflicts of interest or appearances of conflicts of interest. If you have any conflict or appearance of conflict of interest with respect to any item on the agenda, please state this for the record and refrain from inappropriate participation on that item.

- Minutes from the December 13, 2022, meeting was approved unanimously. Jeff Michael made the motion, and Rick Long seconded.

- Evan Davis gave his report for NCDA&CS. He reviewed the following current contracts: G&H Properties with USAF-SJAFB in Hyde County; McCotter Farm Phase 1 with the US Navy and MCIEAST in Pamlico County; and Armstrong Farm Phases 1 & 2 with USAF-SJAFB in Hyde County. All easements are with Working Lands Trust, totaling 2,160.47 acres in the Sentinel Landscapes area.

- Evan Davis also reviewed all the acres conserved since the partnership began in 2016. He said that there are now 10,964.155 acres conserved across 19 recorded easements. He also reviewed the MOU with NC Military Affairs Commission, outlining the total funds that have been awarded to three projects and the expenses that have been incurred to date.

- Evan Davis reviewed the Integrated Mapping Resource that will display completed, ongoing and future easements between the entities involved with NC Sentinel Landscapes. This map will show all NCDA&CS/military partnership easements, along with protected lands from other partners such as the NC Wildlife Commission and the NC Department of Natural and Cultural Resources. He listed Christian.Vose@ncagr.gov, Corey.Hoilman@ncagr.gov and evan.davis@ncagr.gov as department contacts for this ongoing project.

- Rick Long, the Installation Coordinator with the NC Department of Military and Veterans Affairs, presented the report for his agency. He stated that NC DHHS had accepted Department of Defense CDC certification to assist military members and their families with childcare and to help support the cost of leave. He also provided updates for the upcoming project with MCCYN Plus, which had a projected March availability in NC as well as the MOTSU Concurrent Jurisdiction MOA. He also spoke on the MCOY NC Semifinalist Recognition Event and the NC Women Milvets Summit that was to be held on March 7 in Elizabeth City.

- David Smith discussed the National Guard taking over the old Ballentine Building off of Blue Ridge Road in Raleigh. The newly renovated area is going to hold artifacts from the National Guard.

- Jeff Michael gave his NC Department of Natural and Cultural Resources update. He said there are no awards to report at this time. Michael discussed funding for projects and application numbers – in 2022 they were given $12 million in appropriations, and he mentioned that they have 391 proposed projects to be reviewed. He is waiting on their board for approval.

- Brian McRae gave his NC Wildlife Resources Commission Report. He spoke on the upcoming and ongoing project with the Bear Garden tract, and those 386 additional acres had been preserved in partnership with 25 landowners and two government agencies since December 2022.

- Robert Bardon provided the College of Natural Resources and NCSU Report. He provided an updated breakdown of CNR Forest assets, ownership, and acreage. He also mentioned that the College of Natural Resources had hired Dr. Kurt Smith as an assistant professor and extension specialist in forestry.

- Mary Lou Addor reviewed four publications of interest related to forest resources: Management by Objective: Successful Forest Planning; Protecting and Retaining Trees, A Guide for Municipalities and Counties in North Carolina; Managing Longleaf Pine Straw; and FloodWise Flood Mitigation and Reduction Practices Budget Tools. She also reviewed the Woodland Owners Notes. She discussed the Roanoke Electric Cooperative Sustainable Forestry and Land Retention Project that was to be held on March 14, 2023, and said there would also be one held in Halifax County on March 31 to help landowners with improving water quality, preventing soil erosion, and reducing loss of wildlife habitat.

- Chester Lowder was asked to provide the update for the Sentinel Landscape Partnership. He said there are no projects going forward at this time. He stated that Mary Lou Addor was compiling data, and then turned the presentation over to her.

- Mary Lou Addor reported on the National Sentinel Landscape Partnership and the reporting process for 2022. She talked about the Partnership's participation in the Southeast Sentinel Landscapes Climate Resilience Summit hosted by the Southeast Regional Partnership for Planning and Sustainability (SERPPAS). One major outcome of the Summit was developing or expanding, where feasible, near-term smaller projects along with plans for landscape-scale efforts. The results of Summit were to be presented on February 21. Addor also reported on the 2023 Partnership Meetings and calls that had been completed to date.

- Will Best with the Department of Commerce discussed the Dare Bombing Range and the goals for the upcoming year, which would hopefully be a return to normal post-pandemic.

- Dewitt Hardee spoke on behalf of Working Lands Trust, and mentioned their struggles trying to get contracts closed with USAF and USDA and NCDA&CS.

- David Smith said the next Sentinel Meeting would possibly be held in mid-June.

- Weston McCorkle asked for a motion to close the meeting. Jeff Michael made the motion, and Mike Long seconded. The meeting was adjourned at 3:01 pm.

- 06-20-2023 meeting:

Committee members present:

- Weston McCorkle for Commissioner Troxler, NC Department of Agriculture & Consumer Services
- Rod White for Rick Long, NC Department of Military and Veterans Affairs
- Jeff Michael, Deputy Secretary, NC Department of Natural and Cultural Resources
- Brian McRae for Cameron Ingram, NC Wildlife Resources Commission
- Mary Lou Addor for Dr. Myron Floyd
- Chester Lowder, Sentinel Landscape Partnership Liaison

- Other Attendees: Joe Austin, Evan Davis, Corey Hoilman, Anita Kennedy, Jon Lanier, Allison Rodriguez, Nancy Richardson, Rodney Woolard, John Shaw, Dewitt Hardee, Rhonda Murray, Steve Woodson, John Shaw, Neil Oakley, Joy Rybolt, Abby Thornley, Edward Davis, Sabrina Shaffer, Mikey Fulk, Bill Edwards, Eva Buckner, Chris Baillie, Denise Evans, Emma Hughes, Janine McLawhorn, Marty Korenek, Charles Bass, Tom Potter, Michelle Lovejoy, Jason Rose, Scott Shoulars, Will Best, and Christian Vose.

- **Reading of Ethics Reminder** ETHICS REMINDER: Under the State Government Ethics Act, the chairman is required to remind all members of their duty to avoid conflicts of interest or appearances of conflicts of interest. If you have any conflict or appearance of conflict of interest with respect to any item on the agenda, please state this for the record and refrain from inappropriate participation on that item.

- Minutes from the February 14, 2023, meeting was approved. Jeff Michael made the motion to approve, and Mary Lou Addor seconded the motion. It passed unanimously.

- Evan Davis gave his report for NCDA&CS Farmland Preservation. He reviewed current military partnership easements within the Sentinel Landscape, which include G&H Farms, McCotter Farm Phase I, Armstrong Farm Phases I & II, as well as the new contracts out for execution with Working Lands Trust, all of which include Navy/MCI East partnership. Those new contracts are Futral, Jenkins, Small Phase I & II. Since July 2016, almost 11,000 acres have been placed under easement in the Sentinel Landscape. Evan reviewed the NCMAC MOU budget breakdown (award, expenses through last month, and the balance). Evan and Weston McCorkle briefed NCMAC last month on this information. Quarterly reports are due at the end of this month, which Evan will present to the Base Sustainability Sub Committee on July 12th.

- Rod White, the Installation Coordinator with the NC Department of Military and Veterans Affairs, presented the report for his agency. No new updates to report.

- Jeff Michael, Deputy Secretary of Natural Resources in the NC Department of Natural and Cultural Resources, gave their update. Will Summer, Director of Division of Land and Water Stewardship, which administers the NC Land and Water Fund and the Natural Heritage Program, also attended. Jeff said in previous meetings their report has been primarily about the NC Land and Water funding of conservation around military bases. The National Parks Service also has federal funds available through their Land and Water Conservation Fund. The NC Division of Parks and Recreation has a grants-making team for application evaluation and distribution of these federal funds. Jeff recently learned that there are funds specifically for match in conservation projects around military bases. The deadline for the NC Parks team to submit applications to the National Parks Service is August 21st. Local applicants have until June 23rd to get application materials to the NC Parks Team for their review prior to the August deadline.

  Wil Summer reported on the NC Land and Water Fund and Natural Heritage Program. He said that Feb. 2023 grant applications had come in – $98.5 million in requests from 143 applications for mostly land acquisition. Fifteen acquisition applications were from Eastern Sentinel Landscape counties ($10.6 million/6,400 acres). He wanted to make a distinction about their military buffer projects. Some projects they refer to as military buffer projects are not in Sentinel Landscape counties (such as in Durham and Brunswick counties), and also some projects they fund in the Sentinel Landscape area are not military related. Eleven applicants for military buffer projects are not in the Sentinel Landscape counties. The board met to award funding to 17 flood risk reduction projects, and seven of those projects are in ENCSL counties.

- Brian McRae gave the NC Wildlife Resources Commission Report. He started with an update on RASP (Red-Cockaded Woodpecker Recovery and Sustainment Program) which is in the Sentinel Landscape. As of this spring, further longleaf pine restoration efforts have taken place at Bear Garden across 526 acres. WRC staff met with and provided management guidance to 25 landowners in ENCSL area, covering 10,000 acres with the objective to provide enhancement for habitat for various species of greatest conservation need in these areas. The Angola Bay Game land project with TNC has moved to implementation phase with the objective to restore 7,500 acres, re-wet peat, restore pocosin, and provide wildfire reduction. The road raising part of project is being completed. They will apply for an America the Beautiful grant to complete funding.

- Mary Lou Addor provided the update for the College of Natural Resources, NCSU. She spoke about research of interest, publications of interest and programmatic interests. One research of interest relates to the loss of tree inventory, tree canopy, and the resulting economic loss from climate change. Another study, Internet of Animals, relates to AI. Dr. Addor mentioned publications of interest via the College of Natural Resources, many that can be downloaded for free, and can be helpful to landowners. She encouraged this group to check out these publications in case some of the audiences that ENCSL agencies work with may find them useful. She mentioned upcoming workshops of interest: June 21 – timber income and expenses at the Ag Building in Wake County; June 20 – Cumberland County landowner resource workshop.

- Chester Lowder provided the report for the Sentinel Landscape Partnership. He attended virtually and asked Lou for assistance. ENCSL is part of National Sentinel Landscape partnership, and several attended a recent meeting in Camp Ripley in Minnesota (an early Sentinel Landscape partnership). At the ENCSL Partnership meeting within the last month, the MOU was adopted by voluntary agreement among the partners. Lou discussed various partnerships around each installation. Around Fort Liberty, there is RULAC and Sandhills Conservancy, TNC, and the Wildlife Resources Commission. MCI East has many partners in the Onslow BITE working on conservation and military readiness. Seymour Johnson is trying to build capacity with Johnston and Wayne counties. The riverine flooding event held in Sept. 2022 explored unique ways to reduce flooding events.

  ENCSL Partnership feels their role is to help with five-year strategic plans. A new ENCSL website is in development, is to be shared with principal partners after July 4th, and is designed to provide archives of information. Since February, the Partnership has had two in-person and two virtual meetings. Lou said they may go back to the previous model for meetings starting in September, where the principals

meet in the morning and the afternoon session is educational and open to the larger public. They expect to have more meetings this year than any previous year because they have a lot going on – efforts to strengthen military readiness, working with partners on MERS in communities, energy and water connections, and road systems to name a few. The REPI challenge pre-proposal has been submitted for SJAFB. Their RCPP proposal is due on August 18th and will focus on ENCSL landowners' connection/coordination.

- Corey Hoilman from NCDA&CS Farmland Preservation presented the ENCSL combined map. This map shows conservation efforts across ENCSL partners, what has been accomplished and where further efforts are needed and emphasized that it is still a working draFort Evan said map will be shared after meeting with identification of various layers. He wants to make sure any concerns with sharing of data and public access to information are addressed.

- Jeff Michael asked if the map includes other conservation partners that were not funded through partners in the ENCSL Committee. Evan said if data was submitted to the Natural Heritage layer, we would have that data, although it can be confusing because there are different types of restrictions/ different easements. We don't want the map to imply all land is equally protected. If a project doesn't have State funds, currently we don't have that data. This is a first draFort Jeff said there have been attempts over the years to pull this conservation easement information. Lou asked if there are NGOs who can contribute data. Evan looked at a model from VA based on solar to get ideas. Some information is restricted. In NC, electric sub-station information is now restricted data because of recent damage. If we want to include sensitive data for strategic planning, we can do that with certain restrictions. We would like consensus on data sensitivity and to get the map in a final form before distribution.

  John Shaw (virtual attendance) had a question about the large number of acres marked as state-owned properties. These are technically not legally protected because the General Assembly can sell these lands and then they can be developed. He asked if we can we get better protection on state-owned properties? Wil Summer says there is a tool used by the NC Land and Water Fund when they protect property that is going to owned by the State: dedication under the Natural Preserves Act is a conservation agreement that is analogous to a conservation easement. The entity managing the site and the Council of State have to give up the right to sell. Wil later provided this summary: The NC Natural Heritage Program encourages conservation and stewardship of natural areas through programs that create Dedicated Nature Preserves (DNP) under the Nature Preserves Act (GS 143B-135.250-.272). Dedicated Nature Preserves, owned by state agencies, local governments, or nonprofit conservation groups, are permanently protected through a legally binding agreement with DNCR to manage the land for conservation of its natural heritage resources. State-owned land can only be removed from dedication upon approval of the governor and the Council of State. Scott Pohlman from the Natural Heritage Program scott.pohlman@ncdcr.gov is a good contact for further information.

Information on the Natural Heritage Preserves Act can be found here: https://www.ncnhp.org/conservation/dedicated-nature-preserves

Jeff mentioned the Department of Corrections has stepped forward after Executive Order 80 (encouragement on action to thwart effects of Climate Change). Corrections evaluated their land holdings around the state, decided which were not needed, and worked with Will's team to dedicate land. They are an example to show other agencies what they can do.

- No other public comments.

- Weston McCorkle asked for a motion to close the meeting. Jeff made the motion, and Brian seconded. The meeting was adjourned at 2:34 pm.

This report was prepared by the North Carolina Department of Agriculture and Consumer Services on behalf of the North Carolina Sentinel Landscape Committee.