

NORTH CAROLINA SENTINEL LANDSCAPE COMMITTEE



2022 ANNUAL LEGISLATIVE REPORT

September 1, 2022

Agriculture Commissioner – Steve Troxler – Chair
Chief Deputy Director of the Wildlife Resources Commission – Kyle Briggs – Vice Chair
Deputy Secretary of Natural and Cultural Resources – Jeff Michael – Secretary
Assistant Secretary of Military and Veterans Affairs – Ariel Aponte
Dean of the College of Natural Resources at NC State University – Dr. Myron Floyd
Representative of the North Carolina Sentinel Landscape Partnership – Chester Lowder

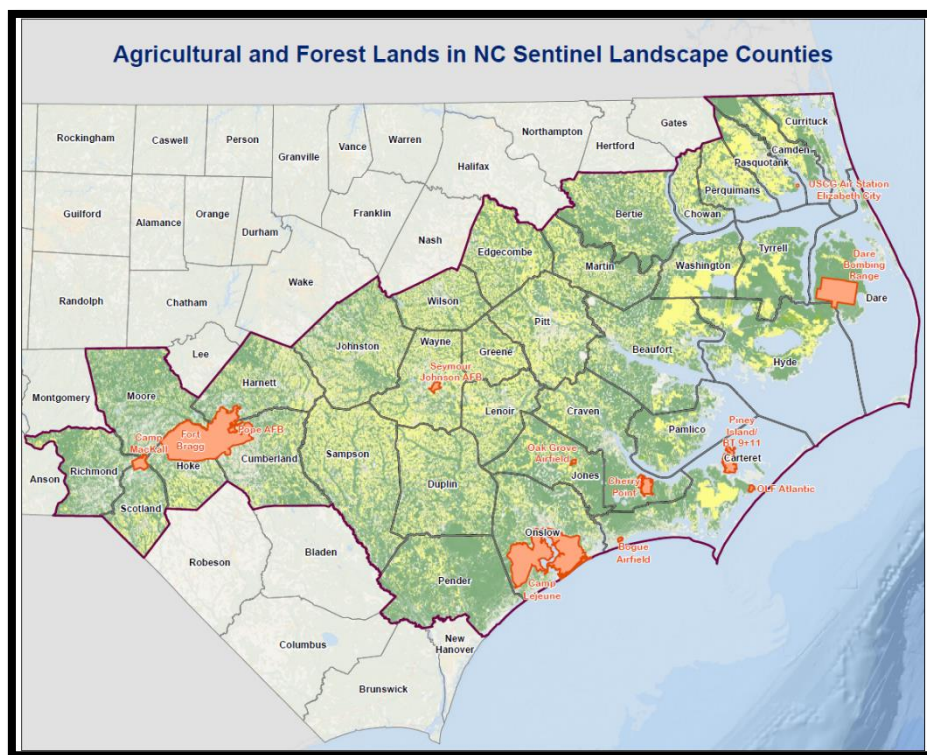
Pursuant to Section 3.19.(f) of Senate Bill 131 / S.L. 2017-10 ... The Committee shall report on its activities conducted to implement this section, including any findings, recommendations, and legislative proposals, to the North Carolina Military Affairs Commission and the Agriculture and Forestry Awareness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

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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 10 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 in similar ways, 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:
 - o 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,
 - o Address restrictions that inhibit military testing and training, and
 - o 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 – Kyle Briggs	Chief Deputy Director of the Wildlife Resources Commission
Secretary – Jeff Michael	Chief Deputy Secretary of Natural and Cultural Resources
Ariel Aponte	Assistant Secretary of the Department of Military and Veteran 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
Laura Brookshire	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
Sabrina Shaffer	Farmland Preservation Specialist
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	8,541.224	15	Bertie, Hyde, Tyrrell, Washington
USN-MCIEAST	936.211	1	Pamlico
Total	9,477.435	16	

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 (ENCSSL). The total funding amount is \$600,000 over four 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.	\$124,455.12	\$175,544.88
NCSU will expand coordination and improve shared communication to sustain linking military readiness, inclusion of working lands, and conservation through publications and landowner outreach.	\$84,072.71	\$75,927.29

North Carolina Foundation for Soil and Water Conservation will expand outreach efforts at the community level in the 33-county area of ENCSL.	\$80,540.30	\$59,459.70
Total	\$289,068.13	\$310,931.87

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 **48,685 acres** in the ENCSL

The ADFPTF has contracted **3,639 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 over \$28 million. The ADFPTF leveraged nearly \$17 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 **45,046 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 **10,421 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
Washington	WLT	737.24	\$1,018,489.00	\$1,018,489.00	-	\$2,036,978.00
Washington	WLT	679.17	\$719,209.00	\$719,209.00	-	\$1,438,418.00
Hyde	WLT	650.00	\$453,730.31	\$453,830.31	\$856,375.00	\$1,763,935.63
Totals		2358.01	\$2,383,391.44	\$2,383,491.44	\$856,375.00	\$5,623,257.90

MCIEAST Priority Area

County	Grant Recipient	Acres	MCIEAST Funds	ADFPTF Funds	USDA Funds	Total Project Value
Jones	WLT	63.10	\$31,679.61	\$31,679.61	-	\$101,219.21
Pamlico	WLT	1,217.87	\$2,494,150.00	\$2,519,450.00	-	\$5,013,600.00
Totals		1280.97	\$2,525,829.61	\$2,551,129.61	-	\$5,144,819.21

N.C. Wildlife Resources Commission Report

Recovery and Sustainment Program (RASP)

The Red-Cockaded Woodpecker (RCW) Recovery and Sustainment Program (RASP) partnership has continued, promoting 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.

The RASP program is well underway, with several notable accomplishments between September 2021 and August 2022 contributing to habitat restoration:

- 2,920 acres of restoration timber harvests completed and/or in progress
- 530 acres of chemical site preparation for reforestation in Fall 2022
- 1200 acres of longleaf and native understory restoration
- 200 acres of prescribed fire conducted
- 9 miles of timber harvest and road upgrades completed to facilitate access for future management projects, such as tree plantings, restoration harvest, and prescribed burns

Technical Guidance

NCWRC continues work to expand private lands conservation opportunities in the NC Sentinel Landscape (NCSL). The recently revised Wildlife Conservation Lands Program (WCLP) allows private landowners to receive a property tax deferment for land they manage to enhance wildlife habitat. From September 2021 through June 2022, we added 4 new WCLP agreements in the Sentinel Landscape focal area. These agreements are in addition to 5 properties (2 in Pender & 3 in Moore) that were previously enrolled into this program within the NCSL. We continue engaging private landowners within the NCSL focal area to voluntarily manage their property for the benefit of Species of Greatest Conservation Need (SGCN). During this reporting period, NCWRC staff made 15 site visits to privately owned tracts within the focal area, resulting in habitat management recommendations for 1168 acres.

County	Number of Agreements	Acres Recommended
Wayne	2	308
Hoke	1	84
Hyde	1	439
Johnston	9	264
Cumberland	1	21
Sampson	1	21
Scotland	1	103
Tyrrell	1	65
Moore	2	155
Totals	19	1460

NCWRC continues to utilize the Green Growth Toolbox (GGT) to support communities in the NCSL with various planning efforts.

- **Virtual GGT opportunities** – Completing a six webinar series in March 2022 that trains land use and transportation planners on how to use the GGT and conservation mapping data in land use development planning.
 - Greenville and Spring Lake have requested assistance recently.
 - Partners for Green Growth funding opportunity for local governments open for project “Idea Submissions” until August 23, 2022.
- **Moore & Richmond Counties** – Recently worked with partners to secure a Landscape Restoration Collaborative grant to restore fire-managed pine habitat from Uwharries to the Sandhills on private and USFS land in Eastern Moore, Northwest Richmond, and Montgomery Counties. Funds will be used to increase the amount of prescribed burning possible in the region to restore fire-managed pine habitat with the goal of restoring longleaf-pine associated species to the Uwharries.

Angola Bay Game Land Resiliency – Pender County

NCWRC and The Nature Conservancy have partnered on an Emergency Coastal Resilience Fund grant from the National Fish and Wildlife Foundation to complete 7,500 acres of hydrologic restoration on Angola Bay Game Land in Pender County. This project will enhance pocosin wetland habitat and provide important community flood resilience benefits to downstream communities (Burgaw, Castle Hayne, and Wilmington).

- Nine months of baseline hydrological data has been collected toward establishing seasonal water table fluctuations and flow patterns within the project area.
- Completed field surveying, generated a drainage flow model and produced concept plans.
- Identified any road raising needs to accommodate site hydration while preserving access opportunities.
- Tentative water control structure locations and types have been identified as well, with structure design underway.
- Approximately 1,200 acres of the forest cover type within the restoration unit are managed pine stands. They have been deemed to be not manageable under the hydrology restoration scenario, so commercial harvest of those stands has been initiated.

NC Wildlife Action Plan (WAP)

NCWRC is responsible for facilitating and implementing the NC Wildlife Action Plan (WAP), which is a comprehensive wildlife resource conservation blueprint. The last Plan was completed in 2015.

- Completed an Addendum 1 to the 2015 Plan which is a minor revision that updated the Species of Greatest Conservation Need (SGCN).
- Completed Addendum 2 which is a major revision to add plants to WAP SGCN list. This Addendum had a 30-day public comment period, and the content was developed by staff at Dept of Ag and Consumer Services, Plant Conservation Program as well as NC Natural Heritage Program. Next step is for the Addendum to be reviewed and approved by USFWS to be added to WAP. Adding this Addendum allows for funds to be spent on plants if Recovering America's Wildlife Act (RAWA) passes in Congress.
- The next Plan revision is due to USFWS by October 1, 2025.
- All of this information is available for download on our website.

Recovering Americas Wildlife Act

Recovering America's Wildlife Act is still being considered in Congress under two bills, HR2773 and S2372. On June 14, 2022, HR 2773 - Recovering America's Wildlife Act of 2022 passed the House and moved on for consideration in the Senate.

- Provide annual 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 Endangered Species list.
- could secure up to \$26 million annually for North Carolina Wildlife Resources projects focused on species of greatest conservation need (SGCN) and their habitats.
- Allow significant opportunities for the NC Sentinel Landscape region including funding for projects related to plant conservation and restoration.
- Website with additional information about the Act (ncwildlife.org/RAWA).

N.C. Department of Natural and Cultural Resources Report

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 2021-August 2022)

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

At its funding meeting in December 2021, NCLWF awarded \$20,623,642 to purchase property in fee or conservation easements on 20,885 acres in the ENCSL counties. 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	Installation
Bertie	North Carolina Coastal Land Trust	Cashy Land and Timber - Hoggards Mill Run	348	\$250,000	USAF Seymour Johnson
Bertie	North Carolina Coastal Land Trust	Chowan River Initiative	1,290	\$314,800	
Carteret	The Conservation Fund	Bogue Town Park - Goose Cr	11	\$115,000	MCALF Bogue Field
Carteret	The Conservation Fund	Long Bay - Piney Island Bombing Range	5,700	\$2,400,000	MCAS Cherry Point
Cumberland	North Carolina Division of Parks & Recreation	Lafayette Taylor - Carvers Cr SP	374	\$625,000	US Army Fort Bragg
Harnett	The Conservation Fund	Johnson Farm - Hector Cr	1,206	\$3,636,230	
Moore	Three Rivers Land Trust	Crisp Tract - McLendons Cr	168	\$358,148	US Army Fort Bragg
Moore	Three Rivers Land Trust	Blake Tract - Jackson Cr	180	\$202,970	
Moore	Three Rivers Land Trust	Deans North - Drowning Cr	200	\$352,520	

Moore	Three Rivers Land Trust	Deans South - Drowning Cr	340	\$591,220	
Moore	Three Rivers Land Trust	Auman Farm - Drowning Cr	455	\$1,027,970	
Onslow	The Nature Conservancy	Matthews Tract - Horse Sw	200	\$67,086	USMC Camp Lejeune
Pender	The Conservation Fund	Carolina Timberlands - Cape Fear Wetlands GL	514	\$100,000	
Pender	The Nature Conservancy	Corbett Tracts - Holly Shelter GL	3,602	\$1,174,795	USMC Camp Lejeune
Pender	The Nature Conservancy	421 Sand Ridge Ph2 - Corbett Ind	5,847	\$8,901,455	
Richmond	The Nature Conservancy	Caddell and BLATCO - Sandhills GL	229	\$400,948	US Army Fort Bragg
Tyrrell	The Conservation Fund	Little Alligator R - Alligator R GL	221	\$105,500	Dare County Bombing Range

Natural Heritage Program Sentinel Landscapes Report (September 2021-August 2022)

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 who are interested in setting aside land for conservation, a land use which is compatible with maintaining the military mission footprint in North Carolina. The table below shows natural heritage surveys conducted by NCNHP to assist with land conservation activities in the Eastern North Carolina Sentinel Landscape during September 2021-August 2022. More than 6,300 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
Beaufort	Van Swamp	NC Wildlife Resources Commission
Bertie	Chowan River Aquatic Habitat	Bertie County and Chowan College
Bertie	Salmon Creek State Natural Area	North Carolina Coastal Land Trust and NC Division of Parks and Recreation
Carteret	Croatan National Forest	US Forest Service
Carteret	Newport River	North Carolina Coastal Land Trust

County	Natural Area	Partner Agency
Craven	Brice's Creek Nature Park	North Carolina Coastal Land Trust
Craven	Upper Broad Creek	North Carolina Coastal Land Trust
Cumberland	Gordon Butler Nature Preserve	Botanical Garden Foundation
Dare	Buxton Woods	Division of Coastal Management
Dare	Kitty Hawk Woods	Division of Coastal Management
Harnett	Upper Cape Fear River Aquatic Habitat	North Carolina Land and Water Fund and The Conservation Fund
Johnston	Buffalo Creek Conservation Corridor	Triangle Land Conservancy
Moore	Buffalo Creek	Three Rivers Land Trust
Moore	Eastwood Plant Conservation Preserve	Three Rivers Land Trust
Moore	McFarland Sandhills	Private Landowner
Pamlico	Bay River	North Carolina Coastal Land Trust
Pender	Black River	The Nature Conservancy
Sampson	Black River	The Nature Conservancy
Washington	Van Swamp	NC Wildlife Resources Commission

N.C. State University College of Natural Resources Report

Sentinel Landscapes are landscape-scale areas; they are the working or natural lands that serve to 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 Agriculture).

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 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.
- Attending US Special Forces Command, University of South Carolina, SC State University, Northern Arizona, University of Minnesota, Shaw University, University of Hawaii as well as representatives from the hemp industry and forest and timberlands management.
- Specific to DOD and CNR, strong interest in research on 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.

New study **used artificial intelligence** to predict where flood damage is likely to happen in the continental United States. 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. 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.

Model is based on AI (computer learning) of 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 made between December 2006 and May of 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.
2. 68.3%, were located outside of 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. Of the 30 most high-risk counties, North Carolina had three: 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, "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 yet 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 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. To interpret findings and analyze tradeoffs between scenarios, summary tables were created based on metrics (e.g., projected growth in priority areas, the projected number of farm loss, and projected growth in headwater catchments) metrics 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 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 as 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 are 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 are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission-essential functions.” Anticipated or unanticipated changes in environmental conditions is 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 effective Aug 16, Dr. Erin Seekamp, a professor of parks, recreation, and tourism management and an extension tourism specialist in 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 – **8 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 put into place 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 though the effort raises concern regarding accountability measures and the potential for negative impact on timber harvesting and other active forest management practices, all which play an important role 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 that Federal agencies be tasked with setting reforestation targets for 2030 and restoring national forests that have been 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 in place. 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 fairly 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 socio-economic scenarios. **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 RAPIDPine, 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.

Baker has shared, “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 5-county area – Onslow, Craven, Pamlico, Jones, Pender, and Carteret counties. Advance awareness and working knowledge of land management practices, and fiscal and technical expertise available to landowners and other professionals interested in landscape-scale economies and conservation.

N.C. Sentinel Landscape Partnership Report

2021 REPI Challenge

The N.C. Sentinel Landscape Partnership submitted a request to the Department of Defense's Readiness and Environmental Protection Integration (REPI) Program Challenge, a competitive grant for projects that combat encroachment that can limit or restrict military training, testing, and operations.

The ENCSL was awarded \$1 million for conservation easements in priority zones for SJAFB, and MCIEAST.

Via the DoD award letter:

“The 14 REPI Challenge finalists collectively identified strategic opportunities that would leverage over \$245 million in potential partner funding to protect approximately 1.8 million acres across nine states. **I am pleased to announce that your project was chosen as one of the 2021 REPI Challenge award recipients and will receive \$1,000,000 in 2021 REPI Challenge funding toward the innovative project you are pursuing at Seymour Johnson Air Force Base, Marine Corps Base Camp Lejeune, and Marine Corps Air Station Cherry Point, subject to the availability of funding.**”

Meeting Summaries

- **09-02-2021 meeting:** Commissioner Steve Troxler called to order the regular meeting of the North Carolina Sentinel Landscape Committee on September 2, 2021. The meeting was held virtually on Microsoft Teams. A recording of the meeting can be seen online:

<https://www.youtube.com/watch?v=jH4GS2jtsRU>

Sabrina Shaffer conducted a roll call. The following committee members were present:

Commissioner Steve Troxler, Chester Lowder, Cameron Ingram, Ariel Aponte, Jeff Michael, Dr. Myron Floyd, and Jeff Michael.

Others present were: Evan Davis, Sabrina Shaffer, Coleman Simpson, Jonathan Lanier, Janine McLawhorn, Bryan Joyner, David Smith, Joe Austin, Mitch Peele, Will Best, Dr. Mary Lou Addor.

Commissioner Steve Troxler read the 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.

Sabrina Shaffer presented the minutes from the June 16th, 2021, meeting. A video of the meeting is available at www.youtube.com. Chester Lowder moved to approve the minutes, and Jeff Michael seconded the motion. The minutes were approved unanimously.

Committee Member Reports Pertaining to NC Sentinel Landscape Activities

- a) Dewitt Hardee (NCDA&CS report) spoke on the REPI Challenge Application and the \$1 million awards that NCDA&CS will be getting to work with all installations of the military in NC. Dewitt spoke on the easement closings in the Sentinel area and the upcoming closings within the next 90 days. Commissioner Troxler asked about the match for the new upcoming military projects. Dewitt said that the funding will be split 25 percent with NCDA&CS, 25 percent military, and 50 percent USDA. Projects with USDA will be a 50/50 match with NCDA&CS and military. Chester Lowder asked how many acres total will be preserved. Dewitt Hardee said over 5,000 acres.
- b) Ariel Aponte (NC Department of Military and Veterans Affairs) reports on the upcoming MOTSU and Camp Butner calibrations and the proposed letters of support.
- c) Jeff Michael (NC Department of Natural and Cultural Resources) reported on the summary of last year's totals for the Land and Water Fund and the National Heritage. There are 11 projects totaling over \$6.8 million.
- d) Shannon Deaton (NC Wildlife Resources Commission) reported that June through August on Recovery and Sustainment Program (RASP), over 830 acres of longleaf pine and native understory planted. Restoration timber harvests continue on Bear Garden and Stones Creek. She also spoke on the limitation of in-person meetings with Covid 19. As an alternative with out Green Growth Toolbox webinars, WRC has been conducting online Q&A sessions after the meetings. She also spoke on offering technical guidance and outreach to private landowners within NC Sentinel Landscape with limited interest expressed. So far there are only two landowners in Pender County and three in Moore County at this time participating in our Wildlife Conservation Lands Program. This program can help landowners receive property tax benefits for wildlife conservation on their lands.

- e) Dr. Myron Floyd (College of Natural Resources NCSU) reported on the spaces between the bases project with Extension faculty and geospatial analytics faculty to investigate the sensitivity of landscapes to support military readiness and conservation practices under alternative urbanization scenarios. New initiative on campus hosted by the provost called the Coastal Resilience and Sustainability Initiative. There may be opportunities to focus on the military within this initiative. List of upcoming events will be provided in the next Sentinel meeting. Also new MOU between NC State, Shaw University, and US Army Special Operations Command to explore opportunities using industrial hemp for special operations activities. This is very new, and updates will be provided. For NCSU's involvement with Sentinel Landscape Partnership, NCSU helped coordinate 15 meetings for development of 2021 REPI Challenge that secured the \$1 million. Contributed to package to include Camp Butner and MOTSU in Sentinel Landscape. 2022 event to celebrate NC Sentinel Landscape; invite media and highlight work being done.
- f) Chester Lowder (Sentinel Landscape Partnership) reported on the Partnership and groups. Covid 19 has prevented in-person meetings, so Partnership has been working on virtual education events for landowners. Flood mitigation in eastern NC will continue to be an effort.
- g) Update on the MOTSU and Camp Butner Consideration as part of the ENCSL was given by Ariel Aponte and Dr. Mary Lou Addor.
- h) Review of the 2021 NC Sentinel Landscape Committee Report was given by Evan Davis. Steve Troxler asked if there were any additional Committee Business Items at this time. Commissioner Steve Troxler adjourned the meeting.

03-10-2022 Meeting- David Smith called to order the regular meeting of the Sentinel Landscape Committee at 2:30 on March 10th in the Hall of Fame Room of the North Carolina Department of Agriculture and Consumer Service's Downtown Raleigh Building.

Veronica Jamison conducted a roll call. The following committee members were present: David Smith (NC Department of Agriculture and Consumer Services), Rick Long (NC Department of Military and Veterans Affairs), Shannon Deaton (NC Wildlife Resources Commission), Dr. Myron Floyd (NCSU College of Natural Resources), Will Summer (NC Department of Natural and Cultural resources), Steve Woodson (Sentinel Landscape Partnership Liaison).

Others present were Evan Davis, Laura Brookshire, Allison Rodriguez, Sabrina Shaffer, Jonathan Lanier, Dewitt Hardee, Scott Shoulars, Dr. Richard Reich, Rodney Woolard, Jeffrey Darnell, Mary Lou Addor, and Bill Ross.

Veronica Jamison presented the minutes from the September 2, 2021, meeting. Dr. Myron Floyd moved to approve the minutes, and Will Summer seconded the motion. The minutes were approved unanimously.

NC Department of Agriculture and Consumer Services Report – Evan Davis

- a) Evan Davis reviewed the perpetual agricultural conversation easement closings in the Eastern NC Sentinel Landscape area since September 1, 2021. Seven easements were recorded with Working Lands Trust totaling 6,081.35 acres. The easements are in Pamlico, Washington, and Tyrrell Counties. The 6 easements recorded in Tyrrell and Washington Counties were in partnership with the US Air Force-Seymour Johnson Air

Force Base. The easement in Pamlico County was in partnership with the US Navy/MCIEAST.

- b) NCDA&CS is currently under contract with Working Lands Trust to record easements on three farms in partnership with the US Air Force. These easements will be in Hyde and Washington Counties. NCD&CS is under contract with Working Lands Trust to record an easement in partnership with MCIEAST. All of the easements will be perpetual and will total approximately 1,771 acres.
- c) Since 2016, NCDA&CS has placed 9,477.44 acres of farmland under easement with military partnership. Fifteen easements totaling 8,541.22 acres in Bertie, Hyde, Tyrrell, and Washington Counties have been in partnership with the US Air Force. One easement of 936.21 acres in Pamlico County has been in partnership with MCIEAST.
- d) The MOU with the NC Military Affairs Commission (NC MAC) continues. NCDA&CS has expended \$92,299.02 of the \$300,000 award on outreach; NCSU has expended \$75,427.08 of the \$160,000 award; and the NC Foundation for Soil and Water Conservation has expended \$78,665.85 of the \$140,000 award.
- e) David Smith spoke that Laura Brookshire had briefly left Farmland Preservation last year to go to the Pesticides Division. She is now back as the Assistant Director to Farmland Preservation.
- f) Jonathan Lanier spoke on the USDA differed tax issue with present use values and conservation easements. Easement holders could potentially be required to back pay three years of differed taxes to the county. Issue came to the forefront because of language in the title policy. NCDA&CS working toward a legislative fix. Will Summer said he supports this.

II. NC Department of Military and Veterans Affairs Report – Rick Long

- a) Rick Long updated on the ongoing training at Seymour Johnson and the hardship they are having with the five lagoons at the end of the runway with the AFB Lagoons/Bird Bash. Migratory birds are causing problems. They have reached out to possibly doing a study with NC State to develop something to help move these birds somewhere else.
- b) Working with Camp Butner and MOTSU. Marine Corp Installation East future engagement with MCIE, MCASCP, MCBCL, MCASNR, & FRC East. SERPASS May 2nd -May 4th Seymour Johnson AFB. He also spoke on Fort Bragg and upcoming steps with NCDOT to try again to get funding to fix road conditions. He spoke on the North Carolina National Guard on the Camp Butner Project to get it added to the Sentinel Landscape area. He spoke on the Military buffer problems. He spoke on the Coast Guard and the new structure at Fort Macon.

III. NC Department of Natural and Cultural Resources – Will Summer

- a) The North Carolina Land and Water Fund board met in December and awarded funds to over \$60 million in projects for our 2021 grant cycle, including 16 projects in the ENCSL counties totaling \$20.4 million and 19,712 acres.

- b) In February, we received 195 applications requesting over \$180 million. This included 24 requests in the ENCSL counties totaling \$19.8 million and 10,525 acres. These figures are just requests at this point and will be considered for funding by our board in September.

IV. NC Wildlife Resources Commission Report – Shannon Deaton

- a) The Recovery and Sustainment Program (RASP) continues to work towards our habitat restoration goals and since September 2021 we have completed approximately 200 acres of site prep burning and approximately 1200 acres of longleaf pine and native understory plantings. Additionally, we have completed nearly 4 miles of timber harvests and road upgrades.
- b) NCWRC continues to work on land conservation opportunities in the NCSL with the newly expanded Wildlife Conservation Lands Program to help landowners receive property tax benefits for conservation on their lands. From September through February 2022, we have added 4 new WCLP agreements in the Sentinel Landscape focal area. These agreements are in addition to 5 other private properties (2 in Pender & 3 in Moore) that were previously enrolled into this program within the NCSL. We continue to look for ways to engage these landowners so we can share program details with them.
- c) As always, staff are working through the Green Growth Toolbox (GGT) to support communities in the NCSL with various planning efforts.
 - **Virtual GGT opportunities** – Completing a 6 webinar series in March 2022 that trains land use and transportation planners on how to use the GGT and conservation mapping data in land use development planning.
 - Greenville and Spring Lake have requested assistance recently.
 - Preparing to meet with Hoke County and new planning director in coordination with the Fort Bragg Regional Land Use Advisory Commission.
 - **Moore & Richmond Counties** – Recently worked with partners to secure a Landscape Restoration Collaborative grant to restore fire-managed pine habitat from Uwharries to the Sandhills on private and USFS land in Eastern Moore, Northwest Richmond, and Montgomery Counties. Funds will be used to increase the amount of prescribed burning possible in the region to restore fire-managed pine habitat with the goal of restoring longleaf-pine associated species to the Uwharries.
- d) As previously mentioned, the Commission and The Nature Conservancy have partnered on an Emergency Coastal Resilience Fund grant from the National Fish and Wildlife Foundation to complete 7,500 acres of hydrologic restoration on Angola Bay Game Land in Pender County. This project will enhance pocosin wetland habitat and provide important community flood resilience benefits to downstream communities (Burgaw, Castle Hayne, and Wilmington).

- Nine months of baseline hydrological data has been collected toward establishing seasonal water table fluctuations and flow patterns within the project area.
 - completed field surveying, generated a drainage flow model and produced concept plans.
 - Identified any road raising needs to accommodate site hydration while preserving access opportunities.
 - Tentative water control structure locations and types have been identified as well, with structure design underway.
 - Approximately 1,200 acres of the forest cover type within the restoration unit are managed pine stands. They have been deemed to be not manageable under the hydrology restoration scenario, so commercial harvest of those stands has been initiated.
- e) NCWRC is responsible for facilitating and implementing the NC Wildlife Action Plan, which is a comprehensive wildlife resource conservation blueprint. The last Plan was completed in 2015.
- Recently completed an Addendum 1 to the 2015 Plan which is a minor revision that updated the Species of Greatest Conservation Need (SGCN).
 - Currently working on Addendum 2 which is a major revision to add plants to our SGCN list. This Addendum will have a 30-day public comment period, but the content was developed by staff at Dept of Ag and Consumer Services, Plant Conservation Program as well as NC Natural Heritage Program. Adding this Addendum allows for funds to be spent on plants if Recovering America's Wildlife Act (RAWA) passes in Congress.
 - The next Plan revision is due to USFWS by October 1, 2025.
 - All of this information is available for download on our website.
- f) Recovering America's Wildlife Act is still being considered in Congress under two bills, HR2773 and S2372.
- provide annual 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 Endangered Species list.
 - could secure up to \$26 million annually for North Carolina wildlife resource projects focused on species of greatest conservation need (SGCN) and their habitats.
 - allow significant opportunities for the NC Sentinel Landscape region including funding for projects related to plant conservation and restoration.
 - website with additional information about the Act (ncwildlife.org/RAWA).

V. NCSU College of Natural Resources Report – Dr. Myron Floyd

- a) MCIEAST Project six areas, two research projects with the College of Natural Resources. He spoke on the flood damage issues and the maps and areas. He spoke on the items that were ongoing with the Department of Defense. SEEDS Hemp project on going with

Shaw University. He spoke on the strong hemp textile program and working on a memorandum of understanding.

VI. Sentinel Landscape Partnership Report - Mary Lou Addor

Research Efforts within the Sentinel Landscape

1. College of Natural Resources and Forestry Extension - Resource Programming in Support of Military Readiness for Marine Corps Installations East (MCIEAST)

Development of an online virtual landowner outreach and engagement in a 5-county area (Craven, Onslow, Pamlico, Jones, Pender, and Carteret) is currently underway.

2. College of Natural Resources Forest Biomaterials

Co-hosted a symposium with DOD that included a focus on uses of industrial hemp as alternative fiber for packaging, in bioenergy and 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.
- Attending University of South Carolina, SC State University, Northern Arizona, University of Minnesota, Shaw University, University of Hawaii as well as representatives DOD, the hemp industry and forest and timberlands management.
- Specific to DOD and CNR, strong interest in research on uses of hemp in textiles and protective packaging in logistics and special operations activities.
- Next steps: develop memorandum of agreement for coordination and future collaboration.

3. 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. (*reference source*)

New study **used artificial intelligence** to predict where flood damage is likely to happen in the continental United States. 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. 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.**

Model is based on AI (computer learning) of methods to create predictions. Model relates predictors – variables related to flood damage such as extreme precipitation, topography, 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 made between December 2006 and May of 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.
 2. 68.3%, were located outside of the high-risk floodplain, while 16.2% were in locations unmapped by FEMA.
- a) 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. Of the 30 most high-risk counties, North Carolina had three: Dare, Hyde and Tyrrell.**

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 policy makers involved in land-use planning, and identifying vulnerable and underserved communities across the landscape.

National Sentinel Landscape Partnership

1. Finalized 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.

2. Federal Coordinating Committee added three new Sentinel Landscapes (as of February 2022), providing a total of ten Sentinel Landscapes in the US.

- a. Camp Bullis (San Antonio Hill Country) Sentinel Landscape
- b. Northwest Florida Sentinel Landscape
- c. Southern Indiana Sentinel Landscape

3. Federal Coordinating Committee is expected to review North Carolina’s Sentinel Landscape boundary extension request to include MOTSU and Camp Butner, and Brunswick, New Hanover, Durham, and Granville counties, sometime April 2022. If further information is required by the FCC, a small committee has been established to assist with this effort.

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. Arnold 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 status of the current REPI Challenge in partnership with Seymour AFB, Ft. Bragg and Camp Mackall, and Marine Corps Installations East.

2. 2021-22 NC Sentinel Landscape Partnership Quarterly Meetings:

a. Will determine potential in person meeting dates in partnership with NC Farm Bureau and/or other partners.

b. Explore scheduling a 1-day meeting/field trip at an installation: example - Camp Butner.

c. Develop a 2022 webinar series beginning with Climate Resilience and Flood Management Studies.

3. 2021-22 NC Sentinel Landscape Partnership Coordinating Committee Calls

a. Purpose: share current highlights of programs in development, or implementation and monitoring, determine resources to aid programming, and new developments within the Sentinel Landscape. (Sept 10, Oct 8, Nov [individual meetings with partners], Dec 10, Mar 11 [email communication])

4. 2022 NC Sentinel Landscape Partnership Recognition and Celebration Event

a. SERPASS's event will be held in May.

b. Partnership expected to hold an event in Fall, 2022 or Spring 2023.

5. 2021 National Sentinel Landscape Partnership Accomplishment Report

a.

https://sentinellandscapes.org/media/pqqbzjmw/2021_sentinellandscapes_accomplishmentsreport.pdf

6. 2022 National Sentinel Landscape Partnership Accomplishment Effort

a. Collect & submit FY 21 data to the REPI Program for development of the 2022 Annual Accomplishments Report based on the following criteria:

- **Committed Funds:** total amount of funding committed to projects within the ENCSL (FY21). Data is stratified by organization to capture organizational investment, as well as 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, the outcomes and the processes that lend themselves to collaborative work. Submitted six success stories and currently drafting additional success stories.

7. 2022 REPI Challenge Grant

a. Focus area is on advancing climate resilience in the Sentinel Landscape area. Since September 2021, a core team and several partners have coordinated development of the 2022 REPI Challenge with projected actions and fiscal support of \$8.4M. The team has been comprised of Ft. Bragg, MCIEAST, and Seymour Johnson AFB (recently SJAFB decided to step back from the current proposal and reapply in 2023 following ongoing planning efforts). Other partners include: the Nature Conservancy, NC Wildlife Resources Commission, College of Natural Resources, NC State, the Coastal Federation, and the NC Department of Agriculture and Consumer Services. The final proposal is due March 21, 2022, and will be submitted March 17, 2022. Resilience measures provided include:

- 1) establishing three living shorelines at MCIEAST in response to lessening the impacts from increasing storm surge, long-term damage, and erosion.
- 2) lessening fuel loads on public and private lands in the Sandhills region near Ft. Bragg through strategic prescribed fire management.
- 3) 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.
- 4) conducting research that examines the role of climate change on RCW populations.

8. Revise NC Sentinel Landscape MOU

- a. use former model and distribute for comment
- b. includes information from National MOU as appropriate

9. **Climate Adaptation and Resilience Coordinator** – REPI pilot demonstration project to operate for 3 years beginning March 15, 2022. Position will be housed with the NC Coastal Federation. CAR Coordinator will work in part (25-30%) on direct NC Coastal Federation projects and (70-75%) to develop a Sentinel Landscape Climate and Adaptation Plan, plus apply for project funding for various resiliency measures. Project will be assessed for transferability across the other nine Sentinel Landscapes. CAR Coordinator - Chris Baille will work directly with Lou (and other partners).

** Climate resilience 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...*

Resiliency of Military Installations to Emerging Threats" hosted by the Subcommittee on Intelligence and Emerging Threats and Capabilities and Subcommittee on Readiness. Link to recording of the hearing can be found: <https://armedservices.house.gov/2019/10/subcommittee-on-intelligence-and-emerging-threats-and-capabilities-and-subcommittee-on-readiness-joint-hearing-resiliency-of-military-installations-to-emerging-threats>.

Bill Ross Spoke on the letter of interest with REPI; will get the letter to Evan Davis.

David Smith adjourned the meeting at 3:40 pm.

-6-15-2022 meeting- Weston McCorkle called to order the regular meeting of the North Carolina Sentinel Landscape Committee on June 15, 2022. The meeting was held virtually on Microsoft Teams.

Attendees:

Committee members present:

- Weston McCorkle, NC Department of Agriculture & Consumer Services
- Ariel Aponte, 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: Steve Troxler, David Smith, Joe Austin, Jonathan Lanier, Janine McLawhorn, Evan Davis, Laura Brookshire, Rodney Woolard, Denise Evans, Chris Baille, Sabrina Shaffer, Nancy Richardson, Mary Lou Addor, Jon Shaw, Ethan Brogden, Malcolm Charles, Marty Korenek, Amanda Sands, Carmen Lombardo, Rhonda Murray, Veronica Jamison, Will Best, Tom Potter, Edward Davis, Michelle Lovejoy, Grace Lawrence, Steve Woodson, Will Summer and Allison Rodriguez.

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.

March 10, 2022 Approval of Minutes Bob Bardon moved to approve and Chester Lowder second the motion. The Minutes were approved.

Evan Davis gave the report for the North Carolina Department of Agriculture and Consumer Services, and reported on current military contracts totaling 1,771.08 acres:

Farm Name	Military Partner	County	Grantee	Length	Acres
Riggs Farm	Navy/MCIEAST	Jones	The Working Lands Trust	Perpetual	63.1
G&H Properties	USAF-SJAFB	Hyde	The Working Lands Trust	Perpetual	291.6
Columbia NC Farm	USAF-SJAFB	Washington	The Working Lands Trust	Perpetual	679.14
Linden Carolina Farm	USAF-SJAFB	Washington	The Working Lands Trust	Perpetual	737.24

Davis reviewed upcoming contracts with military partners:

Farm Name	Military Partner	County	Grantee	Length	Acres
McCotter Farm Phase I	Navy/MCIEAST	Pamlico	The Working Lands Trust	Perpetual	1,217.87
Armstrong Farm	USAF-SJAFB	Hyde	The Working Lands Trust	Perpetual	650

Davis reviewed the military partnership agricultural conservation easements since July 2016:

Military Partner	Acres Conserved	Easements Recorded	Counties
USAF-SJAFB	8,541.224	15	Bertie, Hyde, Tyrrell, Washington
Navy/MCIEAST	936.211	1	Pamlico
TOTAL	9,477.435	16	

Davis reviewed the MOU with the NC Military Affairs Commission:

Project	Award	Expenses through May 2022	Balance
NCDA&CS Outreach	\$300,000	\$113,705.61	\$186,294.39
NCSU Project	\$160,000	\$84,072.71	\$75,927.29
NCFSWC Project	\$140,000	\$79,615.09	\$60,384.91
TOTAL	\$600,000	\$277,393.41	\$322,606.59

Ariel Aponte gave the report for the NC Department of Military and Veterans Affairs which included an announcement of a July public hearing in Chatham County, as well as an announcement of the Warfighter Summit & Exposition in Fayetteville on July 27th and 28th. Ariel also gave updates on the growth in Fort Bragg and joint efforts with Department of Transportation to secure funding to fix road conditions.

Will Summer provided an update for the NC Department of Natural & Cultural Resources. He stated that since the last meeting the board approved \$15M in grants with the North Carolina Land and Water Fund.

Kyle Briggs with the NC Wildlife Resources Commission spoke about the Red-Cockaded Woodpecker and the goals to protect their habitat. Kyle mentioned Bear Garden and the 500 acres to be cleared. He also spoke about the Green Growth Toolbox, which helps communities develop in ways that protect wildlife habitats.

Robert Bardon gave the report for the NC State University of College and Natural Resources

- Since the last update, the NCLWF Board has approved guidelines and a rating system for our Flood Risk Reduction Program.
- The goal is to reduce flood risks through the design, implementation, and preservation of nature-based infrastructure.

- \$15 million available
- Letter of Interest forms are available on our website: nclwf.nc.gov
 Deadline: August 31st North Carolina Department of Natural Resources gave a update on the NC Land and Water Fund. North Carolina Land and Water Fund (NCLWF) Recap of stats for the recent grant cycles: • 2021 – Over \$60 million awarded • 16 in ENCSL for \$20.4 M and 19,712 acres • 2022 – 195 applications and \$180 million requested • 24 in ENCSL for \$19.8 M and 10,525 acres • Decisions on 2022 awards will be made in September • Approximately \$70 million is anticipated to be available
 Cameron Ingram gave a update from the NC Wildlife Resources, Commission gave updates on upcoming new year.
 Mary Lou and Robert Bardon reported on the NC State University College of Natural Resources.
 She spoke on the resources programming in Support of Military Readiness for Marine Corps Installations East (MCIEAST) Rapid pine: Rapidly Advancing Decarbonization from Pine Systems.
 Creating Equitable, Resilient Communities. Bob reports on the NC State Coastal Resilience and sustainability initiative.

Chester Lowder Sentinel Landscape Partnerships

1. Memorandum of Understanding between the Department of Defense, the Department of Interior, and the Department of Agriculture signed. **FCC will be responsible for supporting an implementation plan among the FCC members.**

Initially, Sentinel Landscapes focused on immediate encroachment threats, the program and accompanying policy efforts has grown to include habitat and climate concerns and emerging threats. Adaption planning is a tool to promote resiliency in and around the installation while at the same time, the Sentinel Landscapes focuses on all encroachment risks as a complementary effort for long-term mitigation.

2. Federal Coordinating Committee selected three new Sentinel Landscapes (as of February 2022, which provides a total of 10 Sentinel Landscapes in the US including.

- a. Camp Bullis (San Antonio Hill Country) Sentinel Landscape
- b. Northwest Florida Sentinel Landscape
- c. Southern Indiana Sentinel Landscape

Under consideration by the FCC is the addition of Virginia and South Carolina Sentinel Landscapes based on revisions to their Sentinel Landscape Application

1. FY 22 REPI Challenge Award - \$1.8M allocated

- a. \$971K – Fort Bragg = implementation of a 4-year wildfire management plan, assessments of current surface water flooding issues, and the role of Climate Change on RCW productivity. Partners involved include TNC, NC Wildlife Resources Commission, NC State Parks, and other local initiatives.
- b. \$800K – MCIEAST Climate Resilience Conservation easement to manage surface water runoff.

- c. SJAFB recognized by the REPI Office as part of the original pre-proposal and for tertiary benefits that the FY22 award provides to SJAFB.

2. FY 23 REPI Challenge RFP

- a. planning underway for FY23

- 2. **FY 2023** – Sentinel Landscape Recognition Event – number of partners/individuals to be recognized for their contributions in North Carolina’s landscape-scale management.

4. ENCSL Strategic “Action” Plan

- a. update of the ENCSL Strategic “Action” Plan (completed Sept 2021)
- b. fold in Resilience Plan
- c. expects to present July to Partnership with proposed committee assignments and monthly meetings until end of December.

Ariel Aponte and Dr. Mary Lou Addor gave an update on the MOTSU and Camp Butner Consideration as part of the ENCSL and 2022 REPI Challenge. They stated we did not do so well in the rankings and are going to have to possibly resubmit again with a new packet and see what they are looking for in submission to possibly get it approved this next time. Additional Sentinel Landscape Committee Business Items no other business currently.

Meeting is Adjourned at 2:30 pm



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