

Eastern Shore Forest and Wetland Conservation Initiative

Implemented by
Virginia Department of Wildlife Resources



CONSERVE. CONNECT. PROTECT.

**Final grant report documenting 315 acres of upland forest enhancement and
150 acres of wetland enhancement on Virginia's Eastern Shore**

Started on: 02/01/24

Completed by: 09/30/24

This restoration project was funded in part by the Virginia Coastal Zone Management Program led by the Virginia Department of Environmental Quality through Task 9.01 of FY21 Grant #NA21NOS4190152 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.



Project Background

The Virginia Department of Wildlife Resources proposed to restore and/or enhance 200 acres of upland habitat and 100 acres of wetland habitat on recently acquired lands on Virginia's Eastern Shore. This restoration project presented an outstanding opportunity to facilitate natural marsh migration, support coastal resiliency, provide access to new public lands for wildlife-related recreation, and, most importantly, improve habitat for migratory birds and species of greatest conservation need in an area of hemispheric importance. The Delmarva Peninsula, including Accomack and Northampton counties, supports 7-10 million birds in fall migration annually. The lack of sufficient food and shelter on the Eastern Shore in the Virginia portion creates an energy deficit for birds attempting to cross the Chesapeake Bay and continue southward migration. Changes in population demographics and industrial agriculture in the area, along with loss of existing natural habitats, are additional stressors on wildlife. The DWR and partners estimate that improvement of the forest and wetland quality and availability on these properties will significantly improve the food resources available to migratory birds in this region.

The Eastern Shore of Virginia has long been recognized for its ecological, economic and recreational significance not only for the Commonwealth, but also for the Delmarva Peninsula. In 2021 and 2022, the Virginia DWR acquired more than 7,800 acres of industrial forests, in Accomack County, from the New Forest Fund, a subsidiary of The Conservation Fund. While these properties have been in conservation ownership for more than 20 years, little activity has occurred to improve habitats or provide public access. Recognizing the significance of these lands, the DWR has developed an ambitious management plan to restore wetlands and improve upland habitats to increase the value of these lands for wildlife, particularly migratory birds.

Project Results

Funded through a Coastal Zone Management (CZM) 306A Grant, the Department of Virginia Wildlife Resources (DWR) recently completed the upland forest enhancement on approximately 315 acres on four wildlife management areas across the Eastern Shore of Virginia. Mulching Contractors completed approximately 7.91 miles or 24 acres of road daylighting at Horntown Tract of Coastal Forest WMA restoring/enhancing nearly 202 acres of upland forest, and 1.33 miles or approximately 3 acres at Doe Creek-Bayside Tract enhancing approximately 34 acres. DWR employees and Volunteers utilized chainsaws, pole saws, brush cutters, Herbicide (hypo-hatchets, griddling, cut-stump techniques, and foliar applications), and skid steer with mulching head to remove woody vegetation along the roadways at Doe Creek WMA (enhancing approximately 58 acres) and Saxis WMA-

Sanford Tract (enhancing approximately 21 acres). Throughout the grant project, invasive species were removed and treated along the roads and adjacent forests.

By removing all the woody vegetation on these roadways, resetting succession, sunlight can now penetrate to the adjacent forest floor. Utilizing feather-edging adjacent to the roadways or creating a gradual transition from roadways to interior forest techniques will improve the habitat cover and increase native food production. Over the next growing season, grasses and forbs should be the dominate species on these roadways and adjacent wood blocks. In strategic areas, DWR planted a native mixture of warm season grasses and forbs to increase seed production for the 7 -10 million neotropical bird species that utilize the Eastern Shore for a migration corridor. This CZM Grant has paved the way for future upland habitat enhancement techniques to increase the food resources for neotropical migrants, increase security cover, and improve overall forest health for generations to come.

DWR was also able to enhance approximately 150 acres forested wetland on recently acquired lands at Doe Creek Wildlife Management Area. This property was severely ditched over a century ago to drain seasonally saturated forested wetlands, likely to support agriculture, cattle, or intensive forestry, and the majority of the property was planted with loblolly pine prior to 1950. These funds allowed DWR to survey, design, and oversee the construction of this project which involved building 16 earthen ditch plugs at strategic locations to limited surface and groundwater water loss and restore wetland hydrology. Prior to these hydrologic restoration efforts, a portion of the property was logged to promote the regeneration of diverse native forested wetlands post-implementation. Earthen plugs were created from historic onsite spoil piles and shallow excavations to create small open water wetland pools.

Attachments

Attachment 1: Eastern Shore Forest Enhancement Map

Attachment 2: Doe Creek Road Parcel Wetland Enhancement Plan

Attachment 3: Photolog for Eastern Shore Forest and Wetland Conservation Initiative

Attachment 1
Eastern Shore Forestry Map

Coastal Zone Management Upland Enhancement Areas

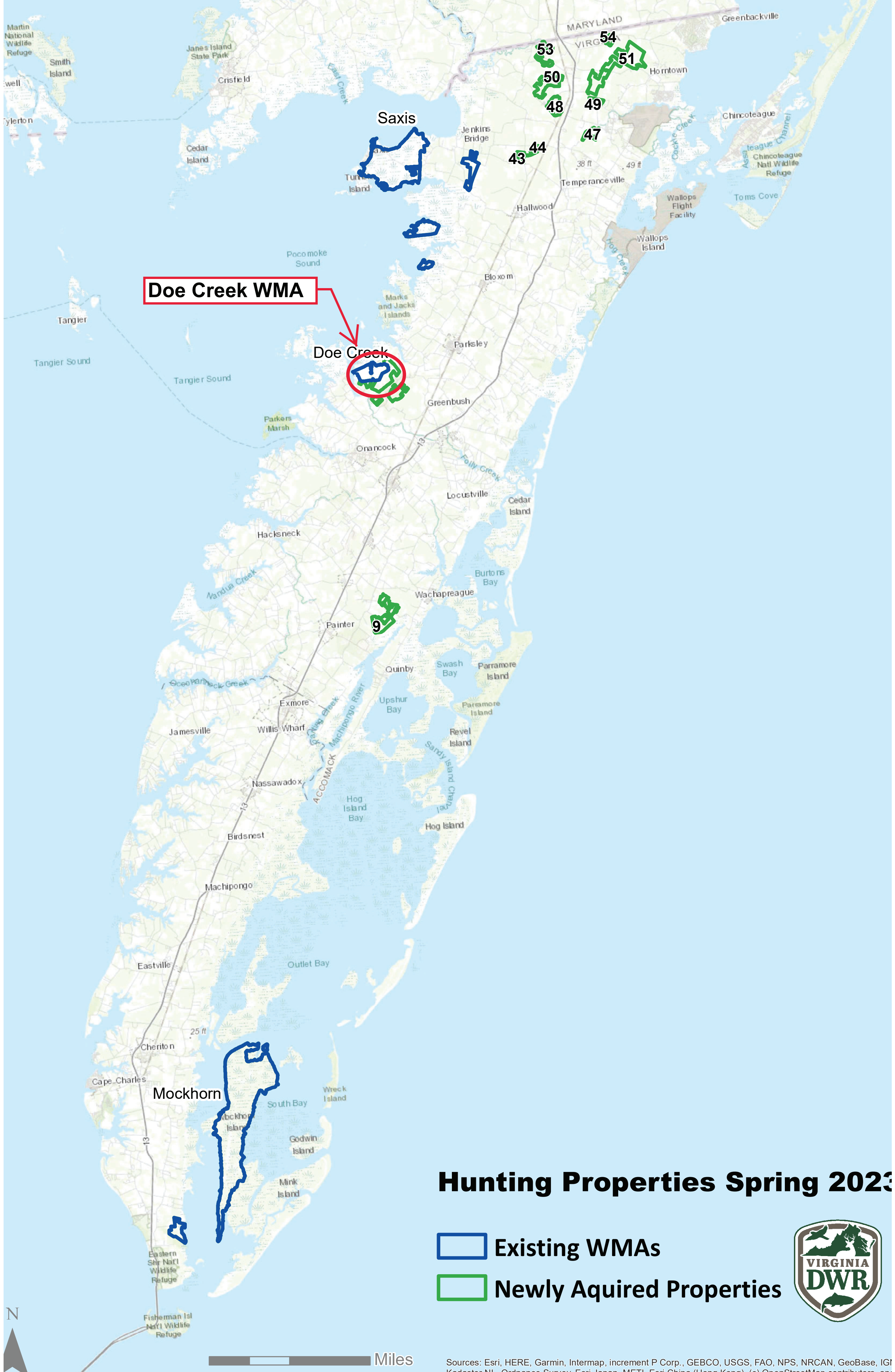


0 3 6 Miles

Legend

- Daylighted Roads
- WMA_NAME
 - Coastal Forest WMA Tract 51
 - Doe Creek
 - Saxis-Sanford

Attachment 2
Doe Creek Road Parcel Wetland Enhancement Plan



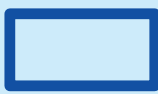
Doe Creek WMA

Doe Creek

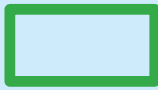
9

Mockhorn

Hunting Properties Spring 2023



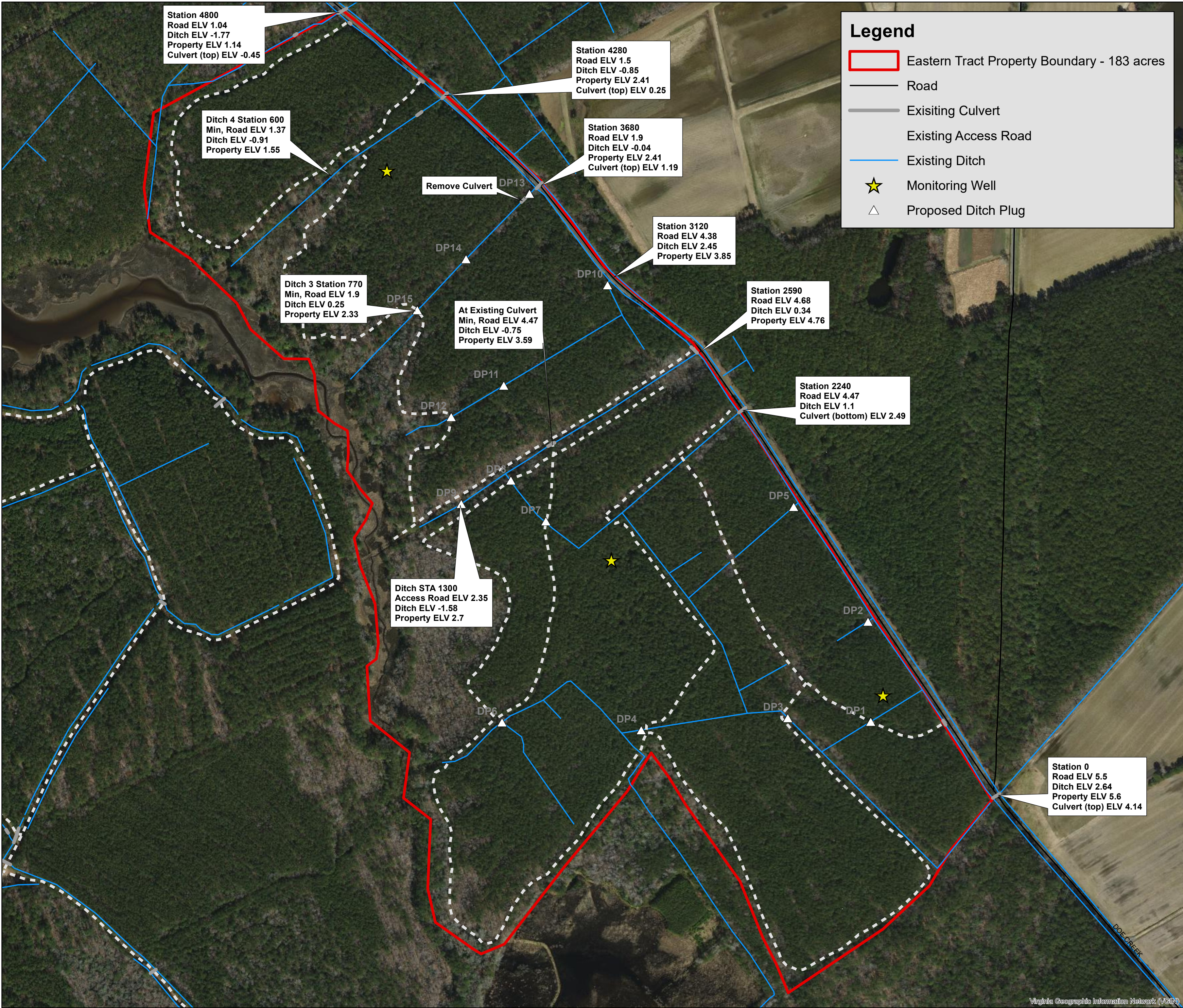
Existing WMAs



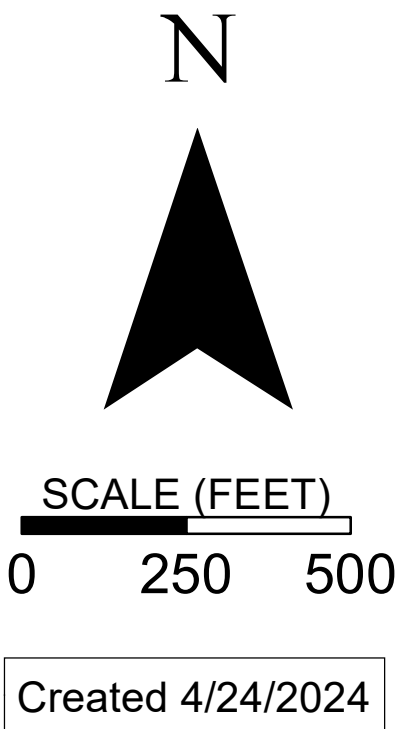
Newly Aquired Properties

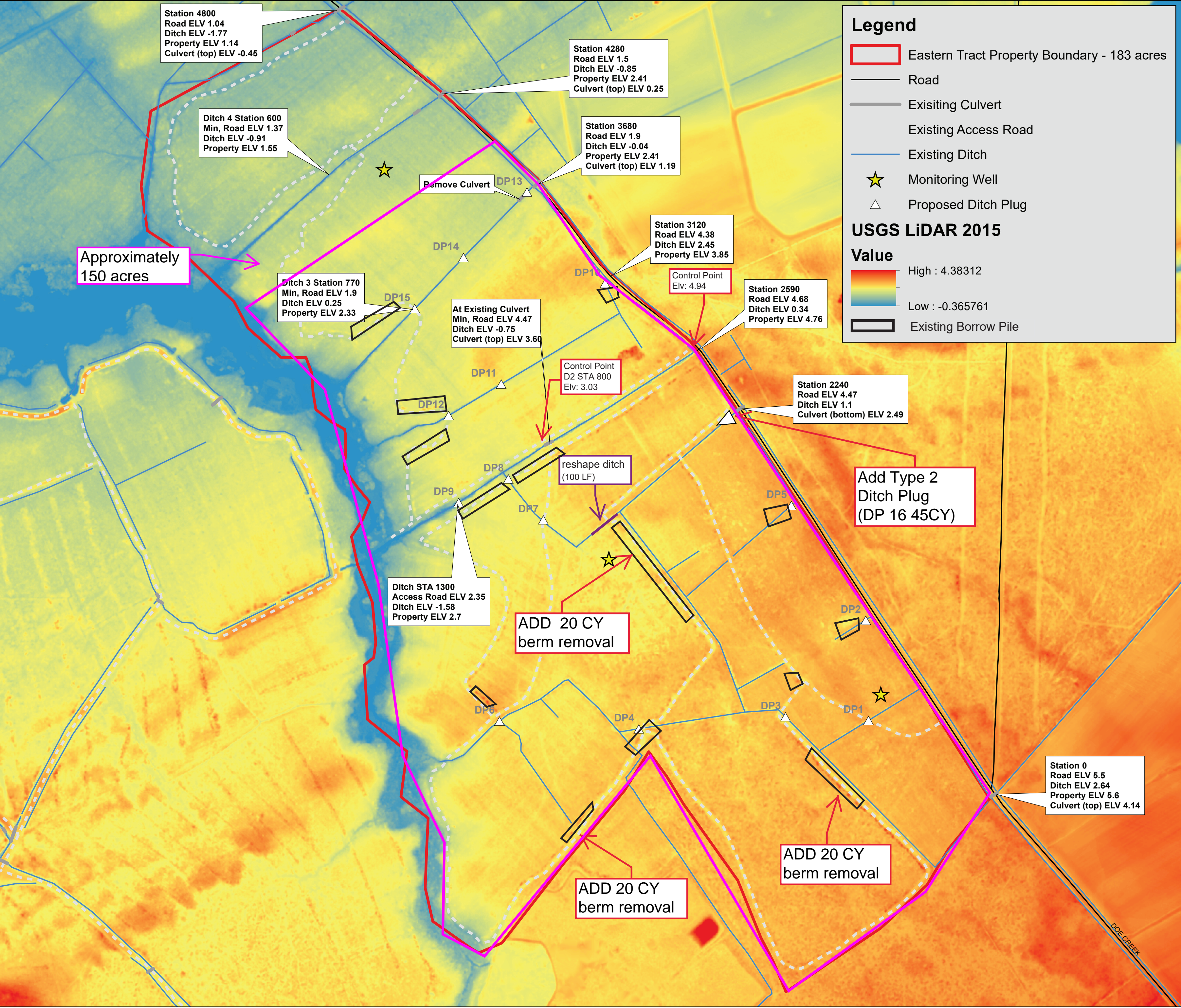


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGT, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

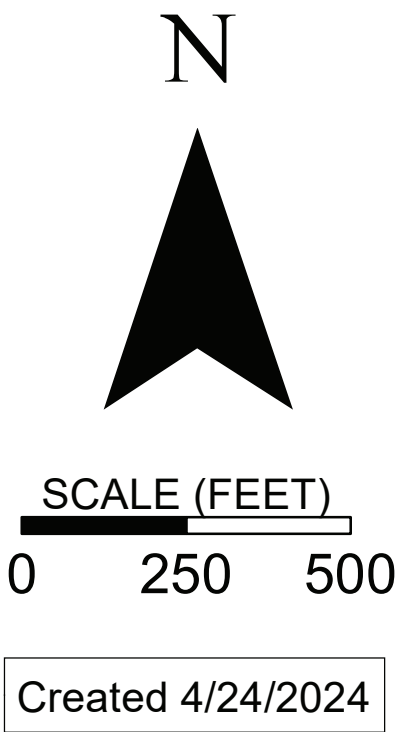


**Wetland Enhancement Plan
Doe Creek Wildlife Management Area
Doe Creek Road Parcel**

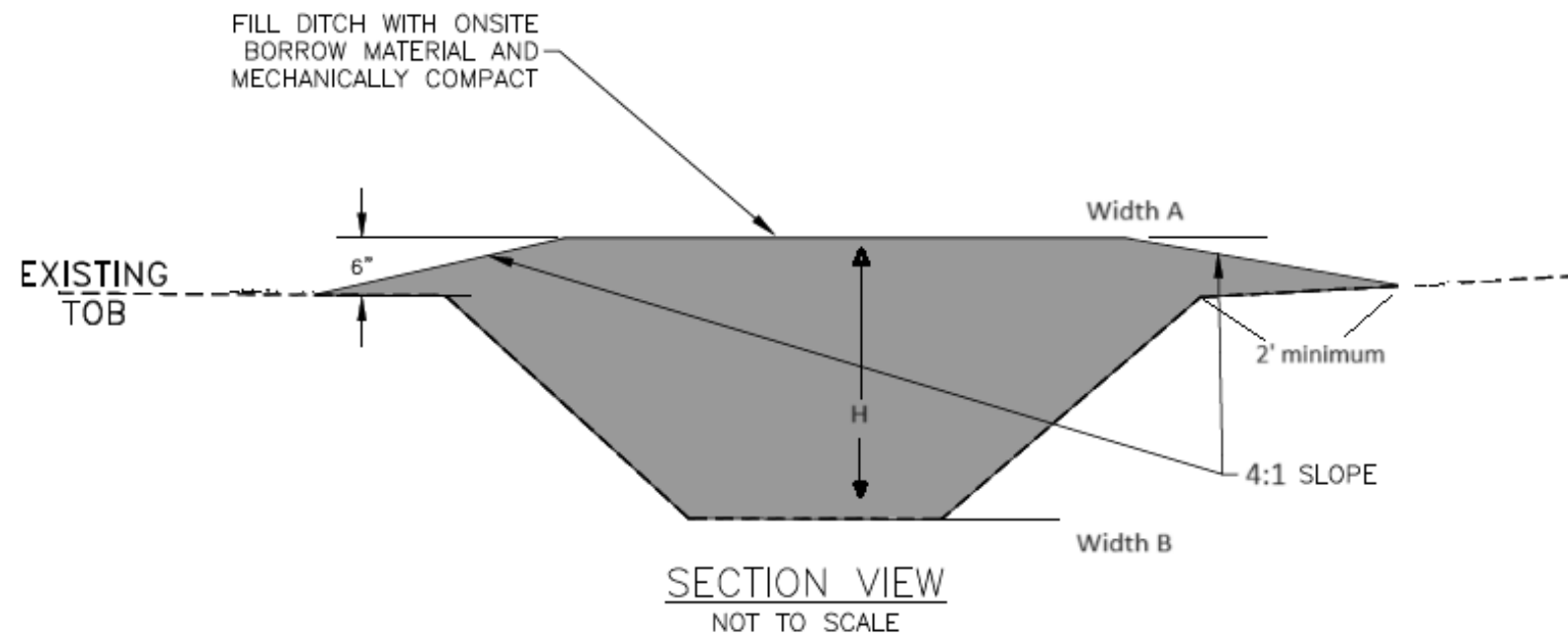




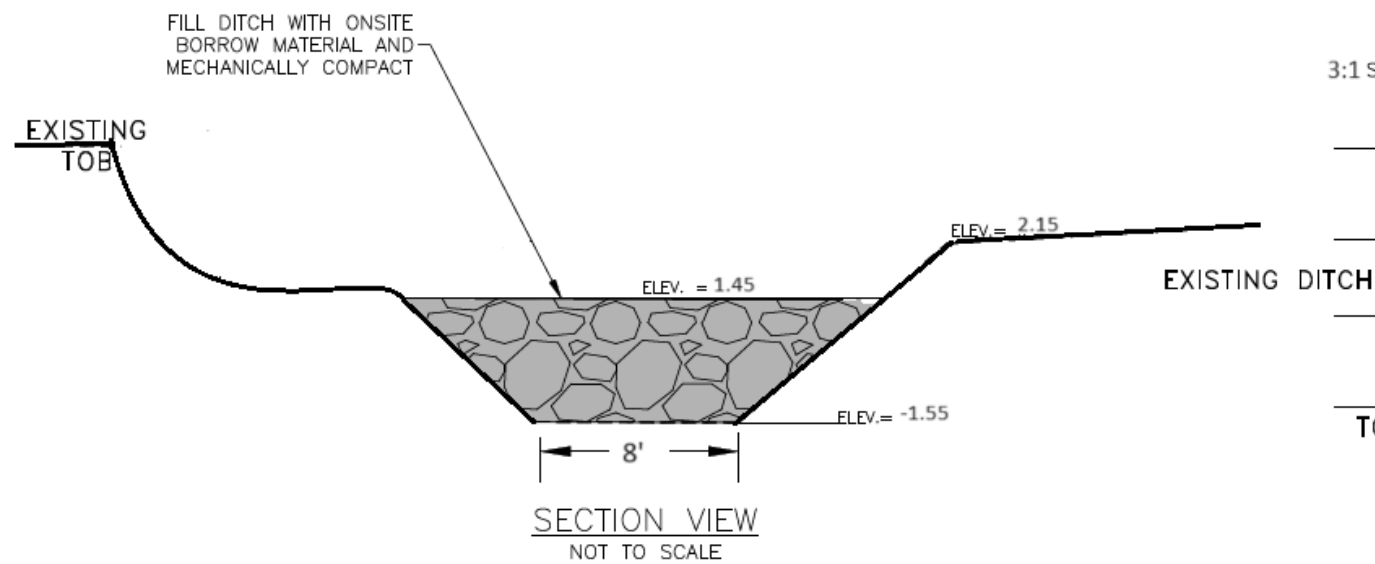
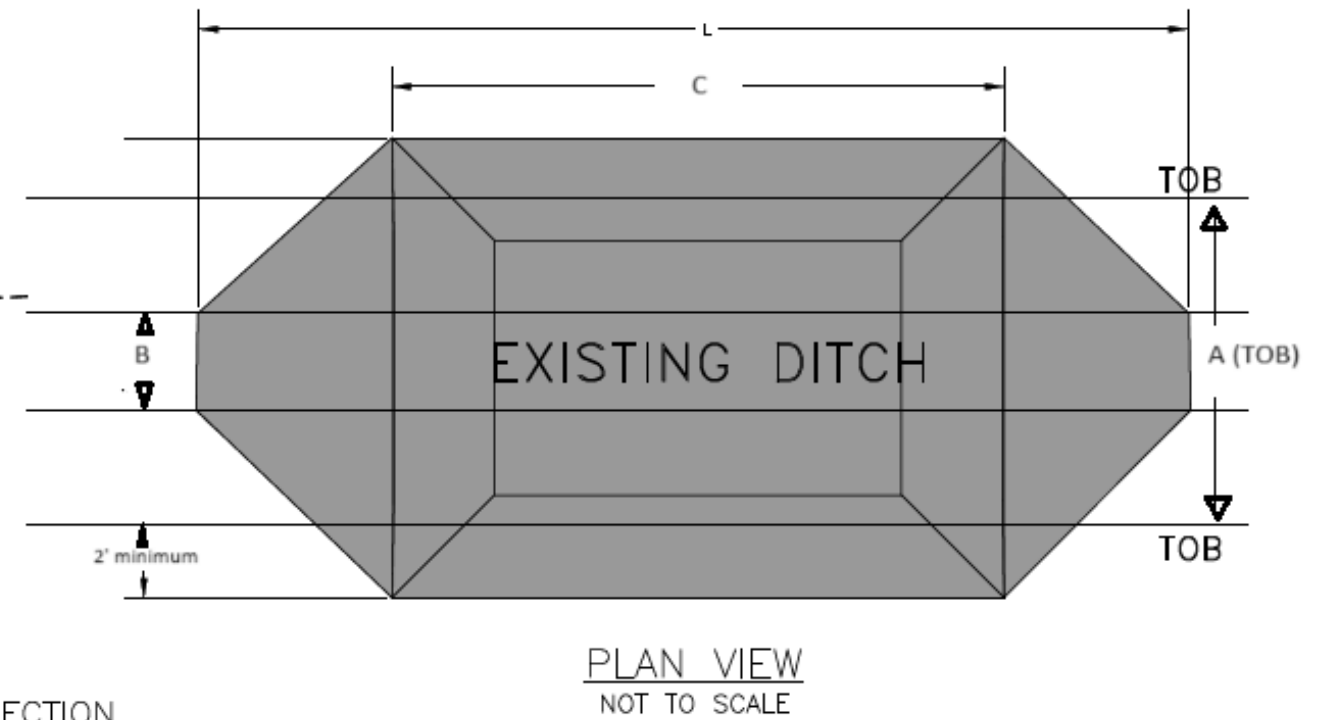
Wetland Enhancement Plan
Doe Creek Wildlife Management Area
Doe Creek Road Parcel



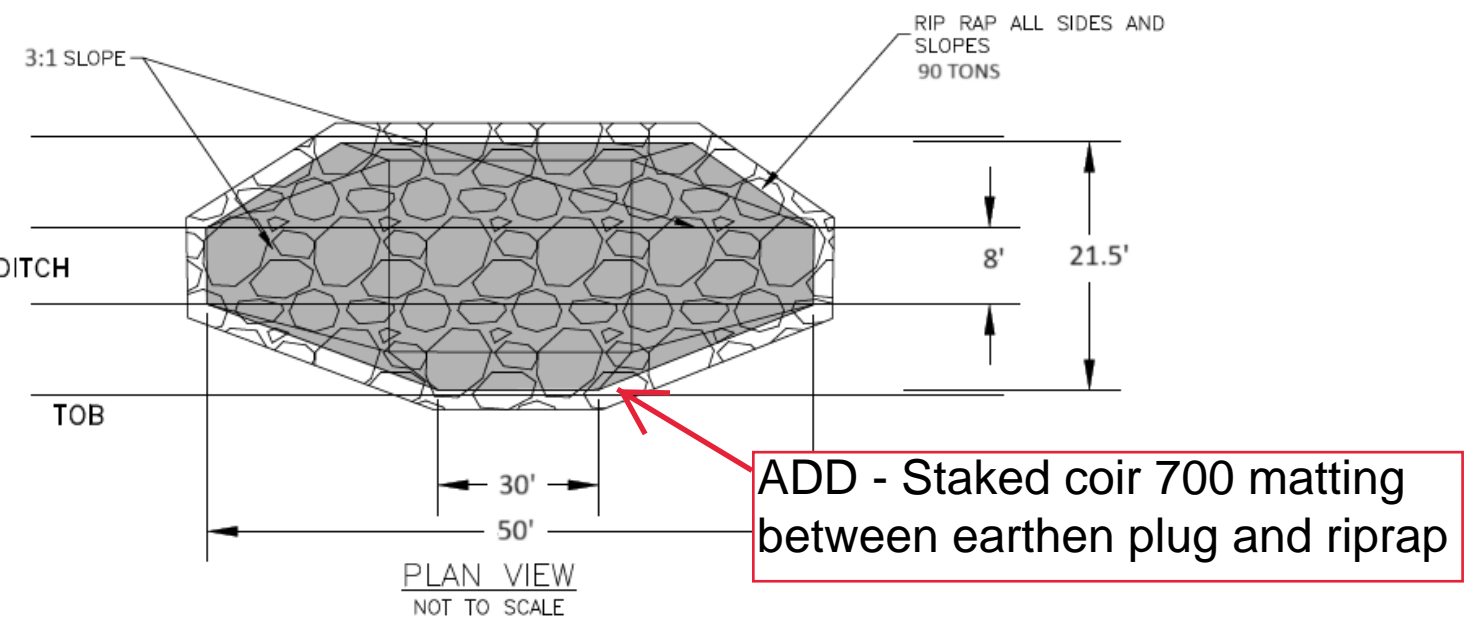
Project Specifications



DITCH PLUG TYPE 1 SECTION
AND PLAN VIEW
NOT TO SCALE



DITCH PLUG TYPE 2 SECTION
AND PLAN VIEW
NOT TO SCALE



| Ditch Plug C.Y. Estimate Parameters | DP1 | DP2 | DP3 | DP4 | DP5 | DP6 | DP7 | DP8 | DP9 (Type 2) | DP10 | DP11 | DP12 | DP13 | DP14 | DP15 |
|-------------------------------------|-----|------|-----|-----|-----|-----|-----|-----|--------------|------|------|------|------|------|------|
| "A" (top of ditch width): | 12 | 13.5 | 10 | 8.5 | 6 | 10 | 18 | 20 | 21.5 | 10 | 8 | 25 | 11 | 10 | 12 |
| "B" (bottom of ditch width): | 2 | 3 | 3.5 | 4 | 2.5 | 4 | 3 | 4 | 8 | 2 | 3 | 5.5 | 3 | 4 | 4 |
| "H" (ditch height +6") : | 1.5 | 2.5 | 3.1 | 2.5 | 1.5 | 3.1 | 1.7 | 2 | 3.1 | 1.7 | 2.7 | 3.25 | 2.5 | 2 | 2.8 |
| "C" (Center Length): | 15 | 20 | 30 | 30 | 15 | 30 | 20 | 20 | 30 | 20 | 20 | 20 | 20 | 15 | 20 |
| "L" (Total Length): | 25 | 40 | 50 | 50 | 25 | 50 | 40 | 40 | 50 | 40 | 40 | 40 | 40 | 25 | 40 |
| Approx. Cubic Yards | 8 | 23 | 31 | 25 | 6 | 32 | 20 | 30 | 68 | 11 | 16 | 50 | 19 | 15 | 25 |
| Total Cubic Yards | 379 | | | | | | | | | | | | | | |

Construction Sequence :

ADD DP 16 - 40 cubic yards and 90 tons of rip-rap

- 1) Excess woody debris from ground clearing activities will be collected in small brush piles (no larger than 40’ diameter and 20’ height) and located at least 15’ from any access road.
- 2) Fill material will only be taken from within borrow pile limits shown on the Plan, or other areas identified and approved by DWR.
- 3) Topsoil, large woody material, and other organic debris will be piled separately from fill to be used for ditch plug construction.
- 4) During excavation, fill material will be examined by DWR to determine if clay-rich compactable fill material is available. If found, compactable soil will be piled separately to be used in the center portion of ditch plug construction.
- 5) Access routes to each plug area will be identified and/or approved by DWR. No tree stump removal (>4” DBH) during ground clearing activities (except borrow piles) to maintain existing semi-impermeable soil layer.
- 6) If necessary, the contractor will be responsible for dewatering and controlling surface waters to maintain dry conditions during ditch plug construction.
- 7) The use of timber matting may be necessary to access ditch banks and cross wetland or other sensitive areas. The creation of ruts will be completely avoided, and any rutted areas will be restored, seeded, and mulched.
- 8) Both ditch banks will be cleared of vegetation aside from mature trees (extent to be flagged by DWR, do not cut trees >12” DBH or remove stumps >4” DBH).
- 9) All woody debris and organic material will be dredged/removed from the bottom the ditch prior to plug construction to ensure quality soil-to-soil contact.
- 10) Ditch plugs will be constructed as detailed above.
- 11) All portions of the ditch plug will be mechanically compacted to the greatest extent practicable.
- 12) Once compacted, topsoil and fine organic material will be spread across the newly constructed ditch plugs, then they will be seeded and mulched.

Attachment 3
Photolog for Eastern Shore Forest and Wetland Conservation Initiative

Photolog for Eastern Shore Forest and Wetland Conservation Initiative

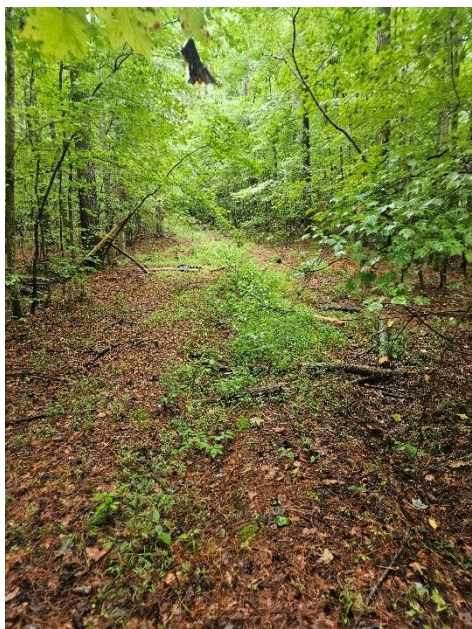


Photo 1&2: Horntown roads prior to daylighting.

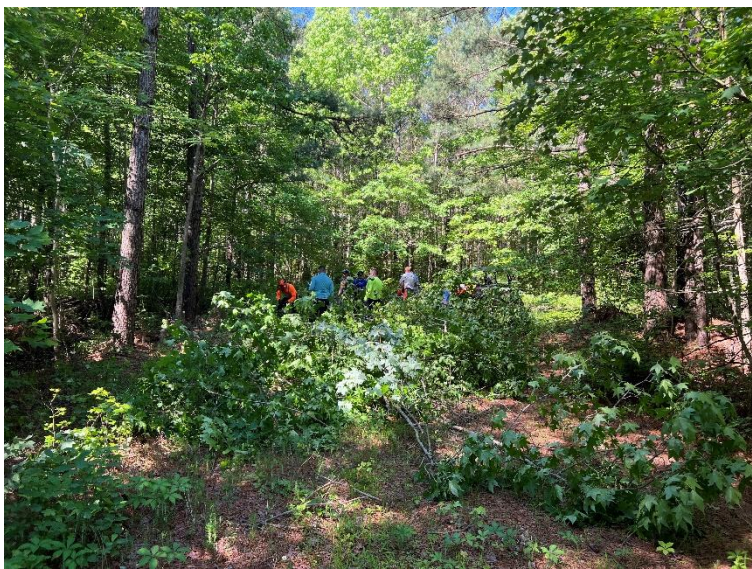


Photo 3:Volunteers hard at working clearing roadway at Doe creek- Bayside property

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 4: Saxs-Sanford property after 4 hour work day with volunteer help.

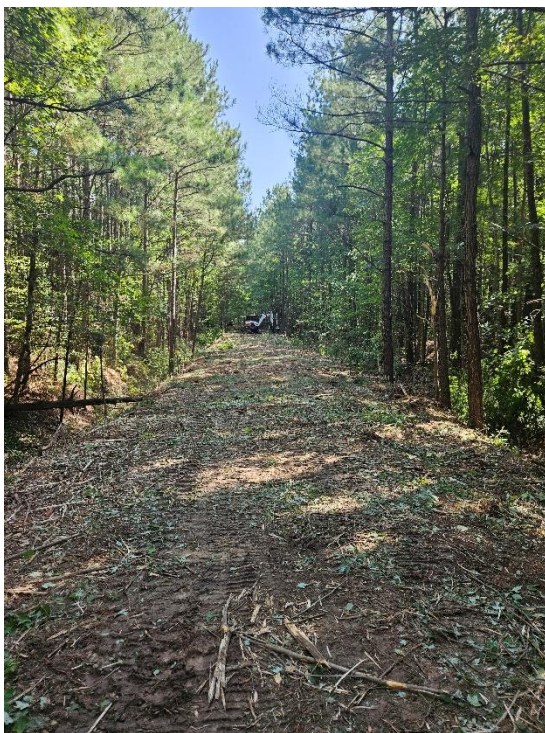


Photo 5: Contractor hard at work removing the woody vegetation along the roadways/ditches at horntown tract 51.

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 6: Contractor cleared roadway- sunlight reaching the ground of the freshly cleared road.



Photo 7: Wildlife clearing created during invasive removal of privet and japanese honeysuckle at Horntown-Tract 51.

Photolog for Eastern Shore Forest and Wetland Conservation Initiative

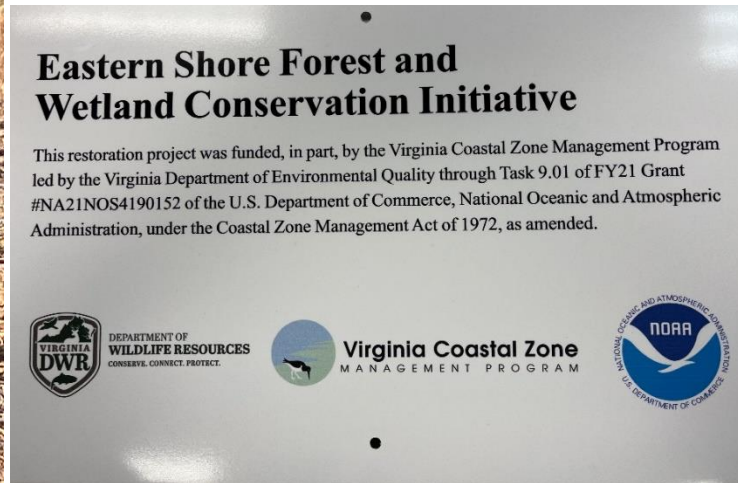


Photo 8: CZM, NOAA, and DWR partnership sign posted at the horntown tract.



Photo 9: Southeast view near DP3 before restoration. (01/10/2024)

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 10: Southwest view at DP3 after restoration. (07/30/2024)



Photo 11: West view of ditch near DP9 before restoration. (11/06/2023)

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 12: West view of DP9. (07/30/2024)



Photo 13: Excavation of a wetland pool adjacent to DP9. (07/09/2024)

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 14: West view of ditch at DP14 before restoration. (11/06/2023)



Photo 15: West view of ditch at DP 15 after restoration. (07/30/2024)

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 16: Wetland pool being excavated adjacent to DP 15. (07/10/2024)



Photo 17: DP 15 in bottom right corner of photo. Wetland pool adjacent to plug is holding water. (02/14/2025)

Photolog for Eastern Shore Forest and Wetland Conservation Initiative



Photo 18: Culvert installation. (07/11/2024)



Photo 19: Wetland pool above DP 11 holding surface water post-restoration. (02/14/2024)