MAP REPORT
FOR
NORFOLK-RICHMOND TASK ORDER
(Norfolk NE, Richmond SE, Richmond NE)

I. INTRODUCTION

A. Purpose

The U.S. Fish and Wildlife Service's National Wetland Inventory is producing maps showing the location and classificationof wetlands and deepwater habitats of the United States. The Classificationof Wetlands and Deepwater Habitats of the United States by Cowardin et al. is the classificationsystem used to define and classifywetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classificationssystem.

The purpose of the report to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species; and (3) to explain local geography, climate and wetland communities.

II. FIELD RECONNAISSANCE

A. Project Area

1. The work area for the Norfolk-Richmond field trip focused on the southeast portion of Virginia (see Figure 1). It is located between 36° 30' 00" and 38° 00' 00" latitude, 76° 00' 00" and 77° 00' 00" longitude and includes three partial 1:100,000 scales maps.

2. 1:100,000 Work Areas

   Norfolk NE
   Richmond SE
   Richmond NE

B. Personnel

K. Bon	-	Photo Interpreter Supervisor Geonex North American Operations, Inc.
B. Johnson	-	Photo Interpreter Geonex North American Operations, Inc.
N. Thomas, III	-	Photo Interpreter Geonex North American Operations, Inc.
K. Summers	-	Photo Interpreter Geonex North American Operations, Inc.
D. Helton	-	Photo Interpreter Geonex North American Operations, Inc.
R. Tiner	-	Regional Wetland Coordinator U.S. Fish and Wildlife Service
G. Smith	-	Assistant Regional Wetland Coordinator U.S. Fish and Wildlife Service

C. Field Trip Dates

February 3-7, 1992

D. Aerial Photography

1:100,000	Date of Photography	Scale	Percent Coverage
Richmond NE	4/17/88	1:40K	2%
	3/17/89	1:40K	48%
	4/20/89	1:40K	6%
	3/21/90	1:40K	8%
	4/08/90	1:40K	7%
	4/09/90	1:40K	2%
	4/13/90	1:40K	5%
	4/24/82	1:58K	22%
Richmond SE	3/17/89	1:40K	48%
	3/21/90	1:40K	8%
	4/08/90	1:40K	24%
	4/09/90	1:40K	2%
	4/12/90	1:40K	4%
	4/13/90	1:40K	14%
Norfolk NE	3/17/89	1:40K	23%
	3/21/90	1:40K	6%
	4/08/90	1:40K	34%
	4/09/90	1:40K	35%
	4/03/91	1:40K	2%

E. Collateral Data

1. U.S.G.S. Topographic Maps

2. S.C.S. Soil Surveys for the counties of:
   Richmond, Gloucester, Virginia Beach City, City of Suffolk, Prince George, New Kent

3. Present NWI data (1:24K drafts from 1:80K Black and White photography).

4. Photointerpretation Conventions for the National Wetlands Inventory, 1990.

5. Bailey, R.G., 1980, Description Of The Ecoregions Of The United States.

6. Cowardin, et al., 1979, The Classification Of Wetlands and Deepwater Habitats Of The United States.

7. Tiner, Ralph W., 1988, Field Guide To Nontidal Wetland Identification.

The user of the map is cautioned that, due to the limitations of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photo interpretation and drafting were completed by Geonex, Inc., St. Petersburg, Florida.

III. PHYSICAL DESCRIPTION OF THE PROJECT AREA

A. Geography

The project area is located in Bailey's (1980) Southeastern Mixed Forest Province, specifically along Virginia's coast and Chesapeake Bay. This region is generally Coastal Plain with numerous sluggish streams and marshes, lakes and swamps (including a large portion of the Dismal Swamp). To the north and west are gently rolling hills with local relief less than 100 feet.

B. Climate

The project area is characteristicof the northern, coastal portion of the Southeastern Mixed Forest Province. Relatively mild winters (temperature wise) and hot, humid summers are the general rule. Average temperatures range from 40°F in winter to 76°F in summer. An exception to this is the winter storms that blow in from the northeast. Precipitation is abundant enough to support vast broad-leaved deciduous forests and extensive bottomland hardwoods. Total annual precipitation is approximately 48 inches, 60% of which falls between April and September.

C. Vegetation

The dominant vegetation in the project area consists of medium to tall forests of broad-leaved deciduous and needle-leaved evergreen trees. Common broad-leaved deciduous trees include gums, maples, oaks, bays, poplar and cedar. Upland areas are generally covered by pine forests with mixed broad-leaved deciduous trees. Common shrubs include greenbriar, azalea, sweet pepper, inkberry and wax myrtle. Some coastal marshes and interior swamps contain large expanses of bald cypress.

D. Soils

The project area has a range of soil types that vary from place to place. Inceptisols dominate in drainages and on floodplains of rivers and streams. These soils are the best suited for crops as is evidenced by the intense agriculture in these areas. See Table 2 for a list of hydric soils occurring in Virginia.

IV. DESCRIPTION OF WETLAND HABITATS IN THE PROJECT AREA

A. Marine System

There is very little of the marine system in the project area. What little there is was classified as subtidal deepwater habitat (M1UBL). This was a small area of Chesapeake Bay and the M1/E1 border was taken from the previous NWI mapping effort completed in the early 80's.

B. Estuarine System

There is plenty of the estuarine system in the project area, the vast majority of which is classified as deepwater tidal habitat (E1UBL). Chesapeake Bay borders the project area and there are numerous tidal rivers (Rappahanock, James, York Rivers). There are also expanses of tidal flats along these rivers (E2US).

For the most part though there are large expanses of brackish salt marsh bordering these rivers and bays. The locations we field checked (Sites 14, 15, 16, 29) were dominated by Typha angustifolia (narrow leaf cattail), Juncus militaris (bayonet rush) and Spartina alterniflora (smooth cordgrass). Common species observed were Phragmites australis (common reed), Scirpus americanus (common threesquare), Spartina patens (saltmeadow cordgrass) and Distichlis spicata (saltgrass). Less common plants included shrubs such as Baccharis halimifolia (sea myrtle), Iva frutescens (marsh elder) and Myrica cerifera (wax myrtle). Occasionally Pinus taeda (loblolly pine) was also present in the higher transitional zones. The majority of the brackish areas in this region are high marsh and were classified as E2EM1P, E2SS1P or E2SS3P. Low marsh (E2EM1N) usually occurs only as pans within larger expanses of high marsh.

C. Riverine System

Riverine systems in the project area were common near the coast where they connect to the major river systems emptying into Chesapeake Bay. The three major river systems are the Rappahanock, the York and the James. Much of these systems was classified as E1UBL because of the saltwater influence of Chesapeake Bay. The remainder of these rivers was classified as R1UBV because of the Chesapeakes' tidal influence on the freshwater systems. The E1/R1 breaks follow the ones made on the previous NWI mapping effort. Where tidal influence stops, rivers were classified as R2UBH or R4SBC where a streambed could be discerned and delineated. Most streams and rivers inland could not be seen on the photography because of the dense vegetative cover (trees) and were classified according to the dominant vegetation.

D. Lacustrine System

Lakes were not common in the project area and were classified in the limnetic subsystem as L1UBH. Vegetated (aquatic) lakes were even less common and were classified in the littoral subsystem as L2AB4H.

All lacustrine bodies were considered to be permanently flooded.

E. Palustrine System

Open water ponds were more common than lakes in the project area and were classified either as permanently flooded (PUBH) or semipermanently flooded (PUBF) depending on size. Most were H, but some of the smaller ones were F. Vegetated (aquatics) ponds were uncommon and classified as either PAB3H (rooted vascular - Nuphar sp. or Nymphaea sp.) or PAB4H (floating vascular - Lemna sp.).

Emergent Wetlands

Freshwater emergent wetlands were much less common than their brackish counterparts and occurred principally in swamps along floodplains, behind beaver dams and in clear-cuts. The most common were probably the seasonally flooded/saturated. These (PEM1E) and the semi-permanently flooded (PEM1F) wetlands were dominated by Typha sp.(cattail) and Scirpus sp. (bulrush) with Juncus sp. (rushes) and Carex sp. (sedges) either co-dominant or common. The seasonally flooded (PEM1C) and temporarily flooded (PEM1A) emergent wetlands (Sites 22, 23) were dominated by Panicum sp. (panic grass), Juncus effusus (soft rush) and a variety of other sedges and rushes. Less common plants included the following tress, shrubs and vines: Liquidambar styraciflua(sweetgum), Salix nigra (black willow), Vaccinium corymbosum (high bush blueberry) and Smilax sp. (greenbriar).

Shrub Wetlands

Shrub wetlands were not common in the project area because of the abundance of forest. However, they did comprise a significant portion of the understory of the forested wetlands and were, at times, co-dominant with both forested and emergent species. Many shrub species are the same as forested species, but less than 20 feet tall.

Site 12 was the only palustrine shrub wetland (PSS1E) documented in the field and was dominated by young Acer rubrum (red maple) and Liquidambar styraciflua(sweetgum). Common plants included young Pinus taeda (loblolly pine) along with the following shrubs which are common throughout the project area: Ilex gabra (inkberry), Clethra alnifolia (sweetpepper bush), Ilex opaca (American holly), and Rhododendron viscosum (swamp azalea). In addition, Leucothoe racemosa (fetterbush) was common along with various vines (Smilax rotundifolia - common greenbriar) and ferns (Osmunda regalis - royal fern).

Semipermanently flooded scrub-shrub wetlands (PSS1F) are usually dominated by Cephalanthus occidentalis (buttonbush) and are rare in the work area.

Seasonally flooded (PSS1C) and temporarily flooded (PSS1A) scrub-shrub wetlands are usually composed of the same assemblage of shrubs, ferns and vines listed above under site 12. These scrub-shrub wetlands can also be tidally influenced and classified as seasonal-tidal (PSS1R) or temporary-tidal (PSS1S).

Forested Wetlands

Forested wetlands are extensive in the project area and consist predominantly of bottomland hardwoods. Floodplains, depressions and swamps are the main localities of these wetlands. The largest expanse of forested wetland is the Dismal Swamp which extends south from Norfolk into North Carolina.

Semipermanently flooded forested wetland is restricted to one needle-leaved deciduous species Taxodium distichum (bald cypress) and is classified as PFO2F. This species can also be classified as PFO2E as in checksite 19. Here it is associated with Quercus alba (white oak), Liquidambar styraciflua (sweet gum) and Acer rubrum (red maple).

Seasonally flooded/saturated, seasonally flooded, and temporarily flooded broad-leaved deciduous wetlands have for the most part the same general assemblage of tree species. Sites 1, 7, 8, 9, 10, 17, 20, 24, 25, 26 are examples of these different water regimes (PFO1E, PFO1C, PFO1A). The major differences between these water regimes are soil saturation and photosignature. Common to dominant species are : Black gum (Nyssa sylvatica), sweet gum (Liquidambar styraciflua), red maple (Acer rubrum), red bay (Persea borbonia), water oak (Quercus nigra), water tupelo (Nyssa biflora), cottonwood (Populus sp), southern red oak (Quercus falcata), laurel oak (Quercus laurifolia), tulip poplar (Liriodendron tulipifera), sweet bay (Magnolia virginiana), Atlantic white cedar (Chamaecyparis thyoides), basket oak (Quercus michauxii), sycamore (Platanus occidentalis), white oak (Quercus alba) and beech (Fagus grandifolia).

The seasonal-tidal (R) and temporary-tidal (S) water regimes may also be used with these species where applicable. The understory includes Smilax rotundifolia (common greenbriar), Lonicera sp. (honeysuckle), Arundinaria sp. (cane) and Carex sp. (sedge).

Needle-leaved evergreen wetlands can either be seasonally or temporarily flooded (PFO4C, PFO4A). The dominant species here is Pinus taeda (loblolly pine) as seen at Sites 6, 11, 13 and 28. The seasonal-tidal (R) and temporary-tidal (S) water regimes can also be used.

Richmond SE and Norfolk NE has areas where pocosins occur. These will be mapped as wetlands if there is a photosignature to follow or the soil surveys map these areas as hydric soils. PFO1F and PFO1E will be used on small areas within the pocosins that look like very wet gum swamps. PFO1A(C) and PFO4A(C) will be used on the majority of the pocosins. Where the soil survey designates organic soil the "g" modifier will be used.

F. WETLAND CLASSIFICATION CODES

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
M1UB (L)	Marine, subtidal, unconsolidated bottom	Open ocean	Sand, mud, cobble
E1UB (L)	Estuarine, subtidal, unconsolidated bottom	Intracoastal waterways including bays, inlets	Sand, mud
E2US (N,P)	Estuarine, intertidal, unconsolidated shore	Sand bar	Sand, mud
E2SS1 (P)	Estuarine, intertidal, scrub-shrub, broad-leaved deciduous	Shrubs	Baccharis halimifolia (sea myrtle) Iva frutescens (marsh elder)
E2SS3 (P)	Estuarine, intertidal, scrub-shrub, broad-leaved evergreen	Shrubs	Myrica cerifera (wax myrtle)
E2EM1 (N,P)	Estuarine, intertidal, emergent, persistent	Salt marsh	Phragmites australis (common reed) Juncus militaris (bayonet rush) Distichlis spicata (salt grass) Spartina alterniflora (smooth cordgrass) Scirpus americanus (swordgrass) Typha angustifolia (narrowleaf cattail)
R1UB (V)	Riverine, tidal, unconsolidated bottom	River, canal	Sand, mud
R1US (N)	Riverine, tidal, unconsolidated shore	Sand bar	Sand, gravel

WETLAND CLASSIFICATION CODES

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
R2UB (H)	Riverine, lower perennial, unconsolidated bottom	River, canal	Sand, mud
R2US (C)	Riverine, lower perennial, unconsolidated shore	Sand bar	Sand, gravel
R4SB (C)	Riverine, intermittent, stream bed	Stream, canal	Sand, mud, gravel
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lake	Sand, mud
L2AB4 (H)	Lacustrine, littoral, aquatic bed, floating vascular	Lake	Lemna sp. (duckweed)
PUB (F,H)	Palustrine, unconsolidated bottom	Pond	Sand, mud
PUS (C)	Palustrine, unconsolidated shore	Pond shores	Sand, mud
PAB3 (H)	Palustrine, aquatic bed, rooted vascular	Pond	Nymphaea sp. (water lily)
PAB4 (H)	Palustrine, aquatic bed, floating vascular	Pond	Lemna sp. (duckweed)
PEM1 (A,C,E,F)	Palustrine, emergent, temporarily to permanently flooded	Swamps, marshes, floodplains	Juncus sp. (rushes) Carex sp. (sedges) Scirpus sp. (bulrushes) Panicum sp. (panic grass) Typha sp. (cattail)

WETLAND CLASSIFICATION CODES

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
PSS1 (A,C,E,F,S,R)	Palustrine, scrub shrub, broad-leaved deciduous	Shrubs	Leucothoe racemosa (fetterbush) Clethra alnifolia (sweetpepper bush) Smilax rotundifolia (common greenbriar) Osmunda regalis (royal fern) Ilex glabra (ink berry) Rhododendron viscosum (swamp azalea) Vaccinium corymbosum (high bush blueberry) Nyssa biflora (water tupelo) Betula nigra (river birch) Cephalanthus occidentalis (buttonbush)
PSS3 (A,C,S,R)	Palustrine, scrub shrub, broad-leaved evergreen	Swamps, marshes, floodplains	Leucothoe racemosa (fetterbush) Clethra alnifolia (sweetpepper bush) Smilax rotundifolia (common greenbriar) Osmunda regalis (royal fern) Ilex glabra (ink berry) Rhododendron viscosum (swamp azalea) Vaccinium corymbosum (high bush blueberry) Ilex opaca (American holly)

WETLAND CLASSIFICATION CODES

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
PFO1 (A,C,E,R,S)	Palustrine, forested, broad-leaved deciduous	Swamps, marshes, floodplains	Nyssa sylvatica (blackgum) Liquidambar styraciflua (sweetgum) Acer rubrum (red maple) Persea borbonia (red bay) Quercus nigra (water oak) Nyssa biflora (water tupelo) Populus sp. (cottonwood) Quercus falcata (southern red oak) Quercus laurifolia (laurel oak) Liriodendron tulipifera (tulip poplar) Magnolia virginiana (sweet bay) Chamaecyparis thyoides (Atlantic white cedar) Quercus michauxii (basket oak) Platanus occidentalis (sycamore) Quercus alba (white oak) Fagus grandifolia (beech)
PFO2 (F)	Palustrine, forested, needle-leaved deciduous	Cypress swamps	Taxodium distichum (bald cypress)
PFO4 (A,C,R,S)	Palustrine, forested, needle-leaved evergreen	Pine forests	Pinus taeda (loblolly pine)
PFO5 (F)	Palustrine, forested, dead	Snags	Various

V. WATER REGIME DESCRIPTIONS AND SPECIAL MODIFIERS

Tidal

Salt and Brackish Areas - Marine and Estuarine Systems

(L) Subtidal - The substrate is permanently flooded with tidal water.

(M) Irregularly Exposed - Land surface is exposed by tides less often than daily.

(N) Regularly Flooded - Tidal water alternately floods and exposes the land surface at least once daily.

(P) Irregularly Flooded - Tidal water floods land surface less often than daily.

Tidally Influenced Freshwater Areas - Lacustrine, Palustrine and Riverine Systems.

(R) Seasonally Flooded - Tidal

(S) Temporarily Flooded - Tidal

(T) Semi-permanently Flooded - Tidal

(V) Permanently Flooded - Tidal

Non-Tidal

(A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristicof this water regime.

(B) Saturated - The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.

(C) Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is extremely variable, extending from saturated to a water table well below the ground surface.

(F) Semi-permanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.

(G) IntermittentlyExposed - Surface water is present throughout the year except in years of extreme drought.

(H) Permanently Flooded - Water covers land surface throughout the year in all years.

(K) ArtificiallyFlooded - The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

Special Modifiers

(x) Excavated - Water lies in or flows through a basin or channel dug by man.

(h) Diked/Impounded - Created or modified by a barrier or dam which purposefully or unintentionally obstructs the outflow of water.

(d) Partially Drained/Ditched - The water level has been artificiallylowered, but the area is still classified as wetland because soil moisture is sufficient to support hydrophytes.

(g) Organic - Designates soils composed of organic material.

VI. IMAGERY

The color tones on the photography are balanced and allow the differentiation of different vegetation types. Bleaching was not a problem. Spectral reflectance was a minor problem in some of the estuarine areas, but only near the edges of the photographs. Resolution and clarity on the photography was good.

VII. MAP PREPARATION

Field checks of areas found within Norfolk-Richmond, Virginia photography were made prior to the actual delineation of wetlands. Field check sites were selected to clarify various signatures found on the photography. These photographic signatures were then identified in the field using vegetation and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, SCS soil surveys, local climate, vegetation, and ecological information.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photointerpretation and drafting were completed by Geonex, Inc., St. Petersburg, Florida.

VIII. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

Ralph Tiner
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U.S. Fish and Wildlife Service
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To order maps only, contact:

Earth Science Information Center (ESIC)
National Cartographic Information Center
U.S. Geological Survey
507 National Center
Reston, VA 22092

1-(800)-USA-MAPS

Maps are identified by the name of the corresponding U.S. Geological Survey (U.S.G.S.) 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S.G.S.

va.rpt
KB/drs.nwi

IX. REFERENCES

Bailey, Robert G., 1980. Description of the Ecoregions of the United States; United States Department of Agriculture Forest Service. Miscellaneous Publications No. 1391.

Cowardin, L.M.; V. Carter; F.C. Golet and E.T. LaRoe, 1979. The Classification of Wetlands and Deepwater Habitats of the United States. United States Department of the Interior, United States Fish and Wildlife Service. Biological Services Program, Washington, D.C.

Tiner, Ralph W., 1988. Field Guide to Non-tidal Wetland Identification.

TABLE 1. Topographic Index to Checksites

1:100,000	7.5' Topo	Checksite Number
Norfolk NE	Cape Henry	1
	Princess Anne	2, 3, 4
	Pleasant Ridge	5
	Creeds	6
	Fentress	7
	Suffolk	8, 9, 10, 11
	Windsor	12, 13
	Benn's Church	14
Richmond SE	Poquoson West	15, 16
	Williamsburg	17, 18
Richmond NE	Shacklefords	19
	Truhart	20, 21, 22
	Church View	23, 24
	Saluda	25
	Reedville	26
	Burgess	27
	Rappahanock	28, 29

Table 2. Preliminary List of Hydric Soils for the State of Virginia.

SOIL SERIES	TAXONOMY	SOIL SERIES	TAXONOMY
Acredale*	*Typic Ochraqualfs*	Lumbee*	*Typic Ochraquults*
Albano*	*Typic Ochraqualfs*	Meggett*	*Typic Albaqualfs*
Argent*	*Typic Ochraqualfs*	Melvin*	*Typic Fluvaquents*
Atkins*	*Typic Fluvaquents*	Muckalee	*Typic Fluvaquents*
Axis	*Typic Sulfaquents*	Myatt*	*Typic Ochraquults*
Backbay*	*Histic Fluvaquents*	Nawney	*Typic Fluvaquents*
Baile*	*Typic Ochraquults*	Nimmo*	*Typic Ochraquults*
Bayboro	*Umbric Paleaquults*	Osier	*Typic Psammaquents*
Belhaven	*Terric Medisaprists*	Othello*	*Typic Ochraquults*
Bethera*	*Typic Paleaquults*	Pamlico	*Terric Medisaprists*
Bibb	*Typic Fluvaquents*	Pamlico, Ponded	*Terric Medisaprists*
Bladen*	*Typic Albaquults*	Partlow*	*Typic Ochraquults*
Bladen, Ponded	*Typic Albaquults*	Pasquotank*	*Typic Haplaquepts*
Blago	*Typic Umbraquults*	Plummer*	*Grossarenic Paleaquults*
Bohicket	*Typic Sulfaquents*	Plummer, Ponded	*Grossarenic Paleaquults*
Chastain	*Typic Fluvaquents*	Pocaty	*Typic Sulfihemists*
Chickahominy*	*Typic Ochraquults*	Pocomoke	*Typic Umbraquults*
Coxville*	*Typic Paleaquults*	Pooler	*Typic Ochraquults*
Croton*	*Typic Fragiaqualfs*	Pooler, Ponded	*Typic Ochraquults*
Deloss	*Typic Umbraquults*	Portsmouth	*Typic Umbraquults*
Dorovan	*Typic Medisaprist*	Pouncey*	*Typic Albaquults*
Duckston	*Typic Psammaquents*	Pungo	*Typic Medisaprists*
Dunning	*Fluvaquentic Haplaquolls*	Purdy*	*Typic Ochraquults*
		Rains*	*Typic Paleaquults*
Elbert*	*Typic Ochraqualfs*	Rappahannock	*Terric Sulfihemists*
Elkton*	*Typic Ochraquults*	Roanoke*	*Typic Ochraquults*
Fallsington*	*Typic Ochraquults*	Roanoke, Ponded	*Typic Ochraquults*
Forestdale*	*Typic Ochraqualfs*	Robertsville*	*Typic Fragiaqualfs*
Hatboro	*Typic Fluvaquents*	Toddstav*	*Typic Ochraquults*
Hyde	*Typic Umbraquults*	Tomotley*	*Typic Ochraquults*
Johnston	*Cumlic Humaquepts*	Torhunta	*Typic Ochraquults*
Kinkora*	*Typic Ochraquults*	Toxaway	*Cumulic Humaquepts*
Kinston	*Typic Fluvaquents*	Weeksville	*Typic Humaquepts*
Leaf*	*Typic Hydraquents*	Wehadkee	*Typic Fluvaquents*
Levy	*Typic Hydraquents*	Weston*	*Typic Ochraquults*
Lickdale*	*Humic Haplaquepts*	Worsham*	*Typic Ochraquults*

* Requires site evaluation to determine whether soil is wetland.