

Tools for Targeting Sites for Voluntary Wetland Activities

(Revised Sept. 2004)

This document is divided into five sections: *Topographic Maps*; *NWI Maps*; *Soil Surveys*; *Aerial Photographs*; and *GIS Resources*. Each section discusses tools useful for targeting sites for Voluntary Wetland Activities, including how to obtain these tools (both electronic and in hardcopy format). This document is also available in PDF format from the Virginia Department of Environmental Quality (DEQ) and Alliance for the Chesapeake Bay websites: <http://www.deq.virginia.gov/wetlands/> - go to *Contacts & Links*, and <http://www.acb-online.org/> - go to *Publications*.

Topographic Maps

U.S. Geological Survey (USGS)

Geological Survey (USGS) is the descendent of the Corps of Topographical Engineers, formed in 1838 to map the western lands of the then conterminous United States. The USGS took over responsibility for mapping the country in 1879 and has been the primary civilian mapping agency of the United States ever since. The best-known USGS maps are the 1:24,000-scale topographic maps, also known as 7.5-minute quadrangles. More than 55,000 7.5-minute maps were made to cover the 48 conterminous States. This is the only uniform map series that covers the entire area of the United States in considerable detail. The 7.5-minute map series was officially completed in 1992, and the program has recently been replaced by *The National Map*, an online, interactive map service. (<http://nationalmap.usgs.gov/>). All topographic maps from the 7.5-minute program, as well as various derived products, remain available for sale.

Finding, Ordering and pricing: <http://geography.usgs.gov/esic/prices/maps.html> is the URL for pricing and ordering information for USGS products. <http://store.usgs.gov/> is the URL for the USGS "Store" for online purchasing. This URL also has a link for finding topographic maps. USGS primary series topographic maps (1:24,000, 1:25,000, 1:63,360 scales) cost \$6.00 per sheet. Most other topographic maps cost \$7.00 per sheet. There is a \$5.00 handling fee for each order. Maps are also available for purchasing by phone by calling 1-888-ASK-USGS (1-888-275-8747) or by contacting:

USGS Informational Services

P.O. Box 25286
Denver, CO 80225

Go to http://geography.usgs.gov/esic/prices/ordering_info.html for more information on ordering maps.

Ordering from private vendors: many private vendors also sell USGS quadrangle maps. A listing of Virginia dealers is included with this document and is titled, *Business Partner Program, Published Products* or may be accessed by going to <http://rockyweb.cr.usgs.gov/acis-bin/choosebylocation.pl?statechoice=Virginia> .

Digital Cartographic Data: Several different types of digital cartographic data are available from the USGS as well as from *Business partners*. This product line includes Digital Line Graphs (DLG), which are small files of data derived from USGS topographic quadrangle maps, arranged in layers, generally for use in geographic information systems; Digital Elevation Models (DEM), which are elevation data (similar data are also available in a seamless set known as National Elevation Data, or NED); Digital Raster Graphics (DRG), which are simply scanned topographic maps; and Digital Orthophoto Quadrangles (DOQ), which are digitized and orthorectified renderings of National Aerial Photography Program products. A listing of these dealers is included with this document and is titled, *Business Partner Program, Digital Cartographic Data*, or may be accessed by going to <http://rockyweb.cr.usgs.gov/acis-bin/querypartner.cgi?pline=X1> .

Information about how to read topographic maps may be obtained by going to <http://erg.usgs.gov/isb/pubs/booklets/symbols/>



National Mapping Information

Business Partner Program

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Published Products

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	Business	Location	Phone
1.	HIGHLANDS SKI AND OUTDOOR CENTER	Abingdon, Virginia	1-800-736-4174
2.	RECREATION EQUIPMENT INC- STORE 34	Bailey'S Crossroads, Virginia	(703) 379-9400
3.	GATES SUPPLY	Beckley, West Virginia	1-800-448-6582
4.	BACK COUNTRY SKI AND SPORT	Blacksburg, Virginia	(540) 552-6400
5.	VERTEX ENTERPRISES LTD	Blacksburg, Virginia	(540) 552-1241
6.	MOUNTAIN SPORTS LTD	Bristol, Virginia	(540) 466-8988
7.	TRI-CITY BLUEPRINT AND SUPPLY	Bristol, Virginia	(800) 826-5253
8.	SOUTH EAST EXPEDITIONS	Cape Charles, Virginia	1-877-225-2925
9.	C & B BLUEPRINT	Charleston, West Virginia	(304) 344-4696
10.	CHARLESTON BLUEPRINT, INC.	Charleston, West Virginia	(304) 343-1063
11.	BLUE RIDGE MOUNTAIN SPORTS	Charlottesville, Virginia	(804) 977-1397
12.	CLARKSBURG BLUEPRINT	Clarksburg, West Virginia	(304) 623-5702
13.	JAMES AND LAW	Clarksburg, West Virginia	(304) 624-7401
14.	MT ROGERS OUTFITTERS	Damascus, Virginia	1-866-287-9577
15.	BLACKWATER BIKES	Davis, West Virginia	(304) 259-5286
16.	MURRAY'S FLY SHOP	Edinburg, Virginia	(540) 984-4212
17.	VA-PIEDMONT PLANNING DISTRICT COMMISSION	Farmville, Virginia	(804) 392-6104
18.	DRAFTING SURVEY SUPPLY	Fredericksburg, Virginia	(540) 373-5800

19.	WILDERNESS VOYAGERS	<i>Harrisonburg, Virginia</i>	(540) 434-7234
20.	C AND B BLUEPRINT	<i>Huntington, West Virginia</i>	1-800-248-8812
21.	BLUE RIDGE OFFICE PRODUCTS	<i>Lexington, Virginia</i>	(540) 463-3432
22.	BOOKERY LTD	<i>Lexington, Virginia</i>	(540) 464-3377
23.	LYNCHBURG CAMERA SHOP	<i>Lynchburg, Virginia</i>	(800) 734-4516
24.	R E FISHER COMPANY INC	<i>Moorefield, West Virginia</i>	(304) 538-2342
25.	ADVENTURE's EDGE-WEST VIRGINIA	<i>Morgantown, West Virginia</i>	(304) 296-9007
26.	WV-GEOLOGICAL AND ECONOMIC SURVEY	<i>Morgantown, West Virginia</i>	(304) 594-2331
27.	EAGLETON's	<i>Norfolk, Virginia</i>	(757) 622-1881
28.	BLUELINE IMAGING	<i>Parkersburg, West Virginia</i>	(304) 428-2186
29.	VA-PRINCE WILLIAM COUNTY-GIS DIVISION	<i>Prince William, Virginia</i>	(703) 792-6840
30.	BARROWS TRADING POST	<i>Quechee, Virginia</i>	(802) 295-1050
31.	ARCHITECTUAL AND ENGINEERING SUPPLY	<i>Richmond, Virginia</i>	(800) 552-2709
32.	KEITH FABRY REPRODUCTION & SUPPLY CORP.	<i>Richmond, Virginia</i>	(804) 649-7551
33.	RICHMOND BLUEPRINT AND SUPPLY INC	<i>Richmond, Virginia</i>	(804) 501-0330
34.	VA REPRODUCTION SUPPLY CO	<i>Richmond, Virginia</i>	1-800-850-8664
35.	MALCOLM BLUEPRINT AND SUPPLY	<i>Roanoke, Virginia</i>	(540) 342-6703
36.	DRAFTING AND TECHNICAL SUPPLIES	<i>Salem, Virginia</i>	1-800-544-5032
37.	HIGHWAY MAPS	<i>South Charleston, West Virginia</i>	(304) 744-4236
38.	ACORD SURVEYING	<i>Summerville, West Virginia</i>	(304) 872-1454
39.	ROCKFISH GAP OUTFITTERS	<i>Waynesboro, Virginia</i>	(540) 943-1461
40.	MOUNTAIN TRAILS	<i>Winchester, Virginia</i>	(540) 667-0030
41.	WINCHESTER REALTY SUPPLY	<i>Winchester, Virginia</i>	(540) 667-5500

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12201 Sunrise Valley Drive, Reston, VA 20192, USA

URL: <http://rockyweb.cr.usgs.gov/acis-bin/querypartner.cgi>

Maintainer: [Business Partner Program Coordinator](#)

Last modified: May 27, 2003

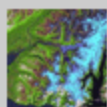
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Digital Cartographic Data

Your query produced 22 result(s)

Sort alphabetically by Business Location

	Business	Location	Product(s)
1.	AIRPHOTOUSA LLC	Phoenix,Arizona	DEM, DOQ, DRG, DLG
2.	BEARTOOTH MAPPING INC.	Red Lodge,Montana	DRG
3.	BIO GEO RECON	Fairborn,Ohio	DEM, DOQ, DRG, DLG
4.	D R G MAPS	Milwaukie,Oregon	DRG
5.	DIGITAL DATA SERVICES	Lakewood,Colorado	DEM, DOQ, DRG, DLG
6.	E G S TECHNOLOGIES CORP.	Bloomington,Illinois	DEM, DRG
7.	EAST VIEW CARTOGRAPHIC INC.	Plymouth,Minnesota	DEM, DOQ, DRG, DLG
8.	GECKO SOFTWARE MAPPING SOLUTIONS	Tucson,Arizona	DEM, DOQ, DRG, DLG
9.	I-CUBED	Fort Collins,Colorado	DEM, DOQ, DRG, DLG
10.	M P N COMPONENTS INC.	Brentwood,New Hampshire	DEM, DOQ, DRG
11.	MAPMART	Englewood,Colorado	DEM, DOQ, DRG, DLG
12.	MAPS A LA CARTE	North Chelmsford,Massachusetts	DOQ, DRG
13.	NM-UNM-EARTH DATA ANALYSIS CENTER	Albuquerque,New Mexico	DEM, DOQ, DRG, DLG
14.	OAKVUE LLC	Saint Jacob,Illinois	DEM, DOQ, DRG, DLG

15. ORBIS GIS, INC.	Charlotte, North Carolina	DEM, DOQ, DRG, DLG
16. PSOMAS & ASSOCIATES	Costa Mesa, California	DEM, DOQ, DRG, DLG
17. R M M C A D D SERVICES	Bend, Oregon	DEM, DOQ, DRG
18. TIMELY DISCOUNT TOPOS	Broomfield, Colorado	DEM, DOQ, DRG, DLG
19. VARGIS, LLC	Herndon, Virginia	DOQ

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Virginia Department of Mines, Minerals and Energy (DMME), Division of Mineral Resources (DMR)

Virginia 7.5-minute quadrangle topographic maps may be purchased from DMME, Division of Mineral Resources. at <http://www.mme.state.va.us/DMR/PUB/maplist2.html#topo> .

Digital Elevation data: The DMR currently has about 20% of the data set. Please contact the DMR for current availability and pricing (<http://www.mme.state.va.us/dmr/DOCS/Digit/drg2.html>).

Hard Copies: The price for single map is \$6 plus shipping and handling. Additional pricing information may be found at: <http://www.mme.state.va.us/Dmr/FAQ/HowToOrder.htm#HowToPay> . Order forms may be downloaded from above website and faxed, mailed, or phoned in to:

VA Division of Mineral Resources

P.O. Box 3667
Charlottesville, VA 22903
Telephone: 434-951-6341
Fax: 434-951-6365

TerraSever

The TerraServer website contains high-resolution USGS aerial imagery and USGS topographic maps that can be downloaded *for free*. You can locate imagery by clicking on the map on the website, <http://terraserver-usa.com/> entering a city or town name in the "Search TerraServer" form at the top of the page, or entering a U.S. street address. Click on *Advanced Find* <http://terraserver-usa.com/AdvFind.aspx> link to see other methods for searching our imagery database.

Topozone

Topozone contains USGS topographic maps that can be searched and printed *for free* by going to <http://www.topozone.com> . Purchasing requires subscription to Topozone Pro. If you own Adobe Writer software, however, you can print to PDF and manipulate the topographic image.

To locate imagery, click on the "View Maps" link to search by fields such as Place Name, Street Address, UTM coordinates, or Latitude and Longitude. Maps are available at different resolutions ranging from 1:10,000 to 1,000,000 in various coordinate formats and in North American Datum 27 and 83.

Additional services are available by purchasing a one-year, single-user subscription to TopoZone Pro for \$49.95. After you register for free, you can try the TopoZone Pro demo and then purchase a subscription by clicking on "Add Services" from the <http://www.topozone.com/topozonepro.aspx> TopoZone menu.

National Geographic

(Non-GIS) National Geographic also sells USGS topographic maps in digital format. The National Geographic's Topo!® CD-ROM set for the Mid-Atlantic USA contains all topographic maps for the Delaware, Maryland, Virginia, West Virginia, and Washington, DC. The set includes 6 CD-ROMs with more than 1,400 scanned USGS maps enhanced with digital 3-D shading. The software allows for interactive mapping.

ID #: TOW9000700 **Price:** \$99.95 each.

http://www.trailsillustrated.com/acb/showdetf.cfm?&DID=15&Product_ID=943&CATID=35

(For use with GIS applications) National Geographic also sells USGS topographic maps in digital format for ArcGIS. Two different packages are available for \$499.95 and \$999.95. Go to the weblink below for more information about these products:

<http://maps.nationalgeographic.com/topo/extension.cfm>

Virginia Economic Development Partnership – GIS Program

The Virginia Economic Development Partnership – GIS Program has free digital data coverage of the 7 1/2 Minute Quadrangles for Virginia

<http://gis.vedp.org/VEDPdatasets.html>

National Wetland Inventory (NWI) Maps

The National Wetlands Inventory (NWI) of the U.S. Fish & Wildlife Service produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. The NWIC has mapped 90 percent of the lower 48 states, and 35 percent of Alaska. About 47 percent of the lower 48 states, and 18 percent of Alaska are digitized. Congressional mandates require the NWIC to produce status and trends reports to Congress at ten-year intervals. In addition to status and trends reports, the NWIC has produced over 130 publications, including manuals, plant and hydric soils lists, field guides, posters, wall size resource maps, atlases, state reports, and numerous articles published in professional journals. <http://wetlands.fws.gov/index.html> is the home page for the NWI. An online mapping code description tool is also available from a link from home page.

Acquiring NWI maps: Visit <http://wetlands.fws.gov/downloads.htm> where you will find options for downloading GIS software based information, NWI digitized wetlands data without the need for GIS software, and links to map distribution centers to name a few. Information accessed by this website include:

- **CD-Rom Entire State coverages and complete database for purchase:** The GeoCommunity Website at <http://store.geocomm.com/viewproduct.phtml?catid=25&productid=117> sells a CD-Rom with all of the NWI Data for \$595.95.
- **View wetland maps overlaid on USGS topo maps:** The following URL provides for online viewing and sells NWI maps available in GeoTIF or PDF format: <http://www.chartiff.com/WetLandMaps/index.html>
- **NWI Map Codes Query Form-** Wetlands and Deepwater Habitats Classification NWI mapping code description. (For example, if you want to know what PUB1 stands for) <http://www.nwi.fws.gov/atx/atx.html>
- **Map Status and Searchable Lists of Quads -** <http://wetlands.fws.gov/statusRegions.htm> shows the status of available wetland maps in the US (Virginia coverage is contained on both Regions 4 and 5).
- **View and print custom NWI maps online-** Go to the NWI Wetlands Interactive Mapper at http://wetlands.fws.gov/mapper_tool.htm to view, save, and print NWI digitized wetlands data for free without the need for GIS software. The interactive mapper allows the user to zoom into an area by county, city, zip code, Refuge, or Lat/Long query and show or hide data layers.
- **Digital Wetland Data (GIS software needed to view maps) types:**
 - **Shape data-**These files are in UTM projection, NAD83 (includes re-projected NAD27 data and "updated" NAD83 data).
 - **Personal Geodatabases-** Updated NWI geodatabase files or new digital data for which there are no NWI hardcopy maps. Examples available.
 - **ARC data -**NWI ARC Export data (Arcdata) files for older quads where hard-copy maps were produced.
 - **Updated ARC data-**Newer and updated ARC Export data without corresponding hard-copy maps.
 - **Riparian/ Wetland Data Shape files and Riparian/Wetland ARC data-**
NWIC also maps riparian areas along with wetland areas in the arid portions of the nation. (To see the riparian mapping standards, visit the publications page at http://wetlands.fws.gov/Pubs_Reports/publi.htm)
- **How to find Hard-Copy Maps for purchase-** NWI hard-copy maps, where available, can be purchased through Cooperator-run Distribution Centers (see below information). These Distribution Centers offer Standard-sized 7.5' paper composites of the NWI maps. Mylar copies and requests for separate NWI overlay copies that do not include the USGS topographic base will no longer be available. http://wetlands.fws.gov/Maps/distribution_ctr.htm is the URL to purchase NWI hardcopy maps. Each Distribution Center establishes its own pricing structure, product types and order procedures.

For Virginia NWI hardcopy maps contact:

Dennis Swartwout
Earth Science Information Office
Blaisdell House
University of Massachusetts
Amherst, MA 01003
(413) 545-0359

Website: <http://www.umass.edu/tei/esio> (<http://www.umass.edu/tei/esio/wtlnd.html> is the URL for NWI maps)

Email: esic@tei.umass.edu

Pricing: National Wetlands Inventory maps are based on the 7.5' (1:24,000 or 1:25,000-scale) USGS topographic quadrangles. They are **\$6.00 each** and are reproduced from mylars onto Diazo blue-line paper. The ESI office requires 3-5 working days, from the date the order is received to complete reproduction of maps (large orders may require more time). **RUSH** service is available at double the cost. If NWI's are needed by a particular date, it should be brought to our attention for appropriate action. All orders will shipped via US Postal Service regular mail unless alternate arrangements are made. Shipping and handling charges **per order** are as follows:

- Rolled = \$6.00/tube
- Folded = \$4.00/envelope
- Federal Express = As Billed plus an 8.3% admin. Fee

Natural Resources Conservation Service (NRCS) Soil Surveys

Soil surveys provide an orderly, on-the-ground, scientific inventory of soil resources that includes maps showing the locations and extent of soils, data about the physical and chemical properties of those soils, and information derived from that data about potentialities and problems of use on each kind of soil in sufficient detail to meet all reasonable needs for farmers, agricultural technicians, community planners, engineers, and scientists in planning and transferring the findings of research and experience to specific land areas.

Soil surveys provide the basic information needed to manage soil sustainably. They also provide information needed to protect water quality, wetlands, and wildlife habitat. Soil surveys are the basis for predicting the behavior of a soil under alternative uses, its potential erosion hazard, potential for ground water contamination, suitability and productivity for cultivated crops, trees, and grasses. Soil surveys are important to planners, engineers, zoning commissions, tax commissioners, homeowners, developers, as well as agricultural producers.

Virginia NRCS Soil Survey web site: <http://www.va.nrcs.usda.gov/technical/Soils/index.html>

Contains Soil Survey standard information, Hydric Soil information, and Soil Survey data

Hydric Soils information: <http://www.va.nrcs.usda.gov/technical/Soils/hydricsoils.html>

VA Hydric Soil List: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/Lists/va.pdf

County lists are available from your local or State NRCS office

Published Soil Surveys of Virginia

The attached document lists published Soil Surveys and their availability. Some are out of print and some are available on CD. The web link for this information is http://soils.usda.gov/survey/printed_surveys/virginia.html

Soil Surveys are available from your local NRCS office or at the State NRCS office:

Virginia State Office:

1606 Santa Rosa Rd.

Culpeper Building, Suite 138

Richmond, VA 23229

Phone: 804-287-1503

Fax: 804-287-1723


Local County Offices: go to http://offices.usda.gov/scripts/ndCGI.exe/oip_public/USA_map



Published Soil Surveys for Virginia

Soil surveys are being completed and published on a continuing schedule. For information on areas not listed and for ordering or obtaining information on reference copies, contact:

State Conservationist
 Culpeper Building, Suite 209
 1606 Santa Rosa Road
 Richmond, VA 23229-5014
 Phone: 804-287-1687
 FAX: 804-287-1737

Key	
*	Out of print
	Available on CD

Accomack 1994
 Accomack and Northampton 1917 *
 Albemarle 1940 *
 Albemarle 1985
 Albemarle Area 1902 *
 Appomattox 1904 *
[Appomattox 2000](#) 
 Augusta 1937 *
 Augusta 1979

Bedford 1989
 Bland 1954 *
 Botetourt 1994

Campbell 1909 *
 Campbell and City of Lynchburg 1977
 Carroll 1967
 Charlotte 1974
 Chesterfield 1906 *
 Chesterfield 1978
 City of Darville 1994
 Clarke 1982
 Culpeper 1952 *

Dinwiddie 1996

Essex 1989

Fairfax 1963
Fairfax and Alexandria 1915 *
Fauquier 1956
Fluvanna 1958
Frederick 1914 *
Frederick 1987

Giles 1985
Gloucester 1980
Goochland 1980
Grayson 1930 *
Greene 1986
Greensville 1989

Halifax 1938 *
Hanover 1905 *
Hanover 1980
Henrico 1914 *
Henrico 1975

Isle of Wight 1941 *
Isle of Wight 1986

James City and York and City of Williamsburg 1985

King George (See Stafford and King George) 1974

Lancaster (See Northumberland and Lancaster) 1963
Lee 1953
Leesburg Area 1903 *
Loudoun 1960 *
Louisa 1905 *
Louisa 1976
Lunenburg 1981

Madison 1975
Mathews 1962 
Mecklenburg 1956
Middlesex 1985
Montgomery 1907 *
Montgomery 1985

Nansemond 1932 *
New Kent 1989
Norfolk Area 1903 *
Norfolk Area 1959
Northampton (See Accomack and Northampton) 1917 *
Northampton 1989
Northumberland and Lancaster 1963
Nottoway 1960

Orange 1927 *

Orange 1971

Page 2001

Pittsylvania 1918 *

Pittsylvania 1994

Powhatan 1988


Prince Edward Area 1901 *

Prince Edward 1958

Prince George 1985

Prince William 1989

Princess Anne Area 1945 *

Pulaski 1985 

Putnam Co. 1994

Rappahannock 1961

Richmond 1982

Roanoke and Cities of Roanoke and Salem 1997

Rockbridge 1931 *

Rockingham 1982

Russell 1945

Scott 1951

Shenandoah 1991

Smyth 1948 *

Southampton 1937 *

Spottsylvania 1985

Stafford and King George 1974

Suffolk, City of 1981

Tazewell 1948 *

Virginia Beach, City of 1985

Warren 1984

Washington 1945 *

Westmoreland 1981

Wise 1954 *

Williamsburg, City of (See James City, et al.) 1985

Wythe 1992

York (See James City, et al.) 1985

Yorktown Area 1905 *

Aerial Photographs

Farm Service Agency (FSA)

The Aerial Photography Field Office, Farm Service Agency is the primary source of aerial imagery for the U.S. Department of Agriculture. Over 10,000,000 images are libraried at the APFO, dating from 1955 through the present.

History: Farmers who participated in farm programs when they began in 1933 needed to have an accurate measurement made of their farms. However, precise measurement then, could only be made in the same way it was done in George Washington's day: surveyor's chains were carried around fields, and maps were drawn by hand. A quicker, cheaper way had to be found since there were millions of acres to measure and map across the country. In 1935 USDA began to use rectified-to-scale aerial photography to more efficiently measure acreage. Today, APFO has aerial photomaps that cover all the Nation's major cropland. Aerial photography dating from 1950 to the present is currently available through the APFO. The aerial photography libraried at the APFO is primarily in a 9x9" film negative format and covers much of the conterminous United States. Digital imagery is currently being archived and developed at the APFO to meet USDA Service Center requirements; imagery in hardcopy format from a digital source is available for selected areas of the United States.

Programs:

- **NATIONAL HIGH ALTITUDE PROGRAM (NHAP):** The NHAP program was started in 1978 by a number of Federal agencies combining their funds and knowledge to provide the greatest range of users with consistent and systematic aerial photography coverage of the United States. The date range of NHAP photography available is 1980 - 1987. Two scales of photography were secured simultaneously; a scale of 1:80,000 is exposed on black-and-white panchromatic film, and the 1:58,000 is exposed on color infrared positive film. The APFO has a complete file of the 1:58,000 CIR film. Both color infrared and black-and-white reproductions can be produced from this film base.
- **NATIONAL AERIAL PHOTOGRAPHY PROGRAM (NAPP):** The NAPP program began in 1987 as a replacement for NHAP, with the objective of acquiring complete uniform photo coverage of the conterminous 48 States over a 5 to 7 year cycle. NAPP photography has a flying scale of 1:40,000 and is exposed on either black-and-white film or color infrared (CIR) film, depending on the requirements of the project.
- **OTHER PHOTOGRAPHY:** Photography secured for the Forest Service (FS) and Natural Resource and Conservation Service (NRCS) can be purchased from the APFO by following the same procedures outlined for FSA photography. The negative scales vary from 1:6,000 to 1:80,000 depending on the project area. Some FS photography was done in natural color or CIR. FS and NRCS photography are not usually rectified for scale accuracy.
- **HISTORICAL AERIAL PHOTOGRAPHY:** Aerial Photography acquired by the USDA prior to 1950 have been transferred to the National Archives and Records Administration (NARA)
http://www.archives.gov/research_room/media_formats/photographs_and_graphics.html

Ordering FSA Aerial Photographs: The APFO has no stock of completed photography on hand. Orders are custom made and normally take from 4 to 6 weeks to be processed. Please allow up to 10 days for shipping. Assisting customers to order aerial photography will speed the processing time, minimizing research required to complete an order. Please include the state, county, FIPS code, and photo program, roll number, exposure, and sectional on the order form (FSA441).

(*Example:* FL Duval 12031 NAPP2 1237 117L) See following web link to order form with instructions:
<http://www.apfo.usda.gov/orderingimagery.html#anchor6410>

Virginia State FSA Office
1606 Santa Rosa Rd.
Culpeper Building, Suite 138
Richmond, VA 23229
Phone: 804-287-1503
Fax: 804-287-1723

USGS

Aerial photographs may also be ordered from the USGS through their *Business Partner Program*. A listing of these dealers is included with this document and is titled, *Business Partner Program, Aerial Photographs*, or may be accessed by going to <http://rockyweb.cr.usgs.gov/acis-bin/querypartner.cgi?results&sort=location>.

TerraServer

The TerraServer website contains high-resolution USGS aerial imagery and USGS topographic maps that can be downloaded *for free*. You can locate imagery by clicking on the map on the website, <http://terraserver-usa.com/> entering a city or town name in the "Search TerraServer" form at the top of the page, or entering a U.S. street address. Click on *Advanced Find* (<http://terraserver-usa.com/advfind.aspx>) link to see other methods for searching our imagery database.

TopozonePro

A one-year, single-user subscription to TopoZone Pro costs \$49.95. After you register for free, you can try the TopoZone Pro demo and then purchase a subscription by clicking on "Add Services" from the [Mhttp://www.topozone.com/topozonepro.aspx](http://www.topozone.com/topozonepro.aspx) TopoZone menu. In addition to topographic map downloads, aerial photography downloads include:

- Full-resolution 1-meter USGS aerial photographs (DOQQs). Aerial photography is a complete and current set of all available USGS 1-meter digital aerial photography
- Full-color color infrared aerial photos -in some areas, the USGS produces 24-bit color infrared (CIR) aerial photography, and TopoZone Pro provides access to that imagery in full color and full detail.
- Aerial photos with street map overlays, or
- Topographic maps with aerial photo overlays

Virginia Department of Transportation (VDOT)

Aerial Photographs can be purchased from VDOT. Photographs are available for some areas of Virginia as early as 1930s. To order, you may fax an order request by sending the following information:

- County
- Route numbers
- Map of your area of interest
- Years of interest (typically indicate decades of interest, ie, 1950s to present or 1990s only)

Fax: (804) 786.1788, c/o
Phone: (804) 786.2575
Contact person: Mary Eaton

Research Fee: Per site, \$6 for each year that is requested. Research fee is required whether or not photography is ordered.

Printing cost: Available sizes:

- 9 X 9 inches= \$3, 2 or more \$2.50
- 18 x 18 = \$11.50
- 27 x 27 =18.50
- 36 x 36= \$25.50

No shipping and handling charge but a 4.5% sales tax is added.

Average turnaround time is 7 working days, may take longer if photos are requested earlier than 1960s.

GIS Resources

Virginia Institute of Marine Science (VIMS)

The VIMS Center for Coastal Resources Management Program undertakes basic and applied research; advisory support of tidal and nontidal wetlands management programs; graduate education; and outreach education projects. The Program is divided into tidal and nontidal wetlands. The URL for the program is:

<http://ccrm.vims.edu/wetlands.html>

Comprehensive Coastal Inventory program (CCI) Online GIS Databases:

CCI made these GIS data links available to support programs and activities which research, enhance, or implement policy related to shoreline management in the Commonwealth of Virginia. The URL,

<http://ccrm.vims.edu/gis/gisdata.html>, contains links to several Virginia Wetlands online GIS databases.

Wetlands mitigation/restoration targeting tool:

VIMS CCRM has recently developed a wetlands mitigation/restoration-targeting tool which uses GIS and landscape practices to determine sites suitable for wetlands creation. There are two components, *static maps* and an *interactive query system*. Currently, the model has been run for the Hampton Roads Area. VIMS CCRM plans to run the model statewide in the future. The URL for this tool is:

http://ccrm.vims.edu/cci/wet_target/

Chesapeake Bay Program

The Chesapeake Bay Program Office frequently uses geographic information system (GIS) software for analysis and display of geographic information (mapping). A variety of Chesapeake Bay watershed map related resources are provided at <http://www.chesapeakebay.net/maps.htm> :

- Chesapeake Bay Watershed
- Watershed in HUC Units
- Chesapeake Bay Subwatersheds
- Chesapeake Bay Tributaries
- CBP Segments
- Counties in the Watershed
- Fish Passage
- Population Percentages
- Other Maps

Interactive Mapping is also available including:

- **Watershed Profiles** assembles maps, charts and information that portray the environmental condition of Chesapeake Bay watersheds. This Internet application operates at a variety of scales from the entire 64,000 square mile Chesapeake Bay watershed to small tributary watersheds. Information on landscape changes, Bay Program activities, other organization activities, and places to visit are some of the information displayed in easy to read charts, maps and tables.
- **Bay Atlas:** An interactive mapping tool for the Chesapeake Bay Watershed. A custom map of any area can be created. Data includes submerged aquatic vegetation, nutrient point sources, historic oyster reefs, predicted nutrient pollution and more.
- Links to other sites with Geographic Information System (GIS) Data are also found from this WebPage.

Towson University Center for Geographical Informational Sciences (CGIS)

The Towson University Center for Geographical Informational Sciences (CGIS) offers geographic information system (GIS) services, free software, and interactive mapping for analysis and display of geographic information (mapping). A variety of resources are provided at <http://chesapeake.towson.edu/> . The URL for the Interactive-mapping page is <http://chesapeake.towson.edu/mapping/>.

The GIS Center at Radford University

Radford University makes available a number of spatial data sources covering Virginia and some surrounding states:

- USGS 7.5' Digital Raster Graphics (DRGs) for Virginia, West Virginia, North Carolina, Maryland, and the District of Columbia
- Digital Ortho Quarter Quads (in cooperation with Virginia Economic Development Partnerships)
- Trimble GPS Differential Error Correction Data from RU's GPS Base Station
- Links to Spatial Data available on the Internet
- Merged 7.5' DEMs (1:24,000) for many counties and cities in Virginia. Press the "County Digital Elevation Model" button to find out more (May 25, 2000)

http://www.radford.edu/~geoserve/main_page.html