

Coastal GEMS Fact Sheet Template for Grantees

Grant Year: 08

Task Number: 11.02

Description

The Virginia Ecological Value Assessment (VEVA) integrates elements of the Priority Conservation Areas dataset, Healthy Waters data and VIMS Center for Coastal Resource Management Cumulative Resource Inventory. VEVA delineates priority conservation areas ranked by level of importance based on VA Dept. of Game and Inland Fisheries' Priority Wildlife Diversity Conservation Areas, VA Dept of Conservation and Recreation Division of Natural Heritage Conservation Sites Layer (CSL) and Natural Lands Network (NLN), VCU Center for Environmental Studies aquatic resource integrity layer and VIMS College of William and Mary Center for Coastal Resource Management Cumulative Resource Assessment. The Virginia Ecological Value Assessment builds on the definition of the Priority Conservation Areas and are defined as lands, aquatic resources and surface waters indentified as important for conservation of Virginia's wildlife, plants, and aquatic and natural communities. The identified lands, aquatic resources and waters can be used to prioritize areas for preservation, protection or specific management action.

This dataset was developed to synthesize important natural resource information in one geospatial layer for natural resource management, land use management and awareness. This dataset is intended to guide conservation planning and efforts. This dataset is not intended to replace on the ground surveys or consultations with biologists as appropriate.

Status

Completed, February 2011

Citation

2011. Virginia Ecological Value Assessment, VA DGIF, VA DCR-DNH, VCU-CES, VIMS-CCRM.

This data/tool can is directly accessible at:

<http://www.dgif.virginia.gov/gis/gis-data.asp>

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Why should we care (about this resource)?

Habitat loss, fragmentation, and degradation represent the most significant threats to the effective conservation of wildlife species, aquatic resources and natural communities. At the same time,

however, the capacity to purchase, conserve, and manage lands has diminished significantly due to declining budgets and rising land costs. This problem is compounded by the rapid conversion of lands from traditional rural and agricultural uses, which may support a broad diversity of wildlife, to industrial or residential uses, which create landscapes inhospitable to many species. This condition is especially clear in Virginia where—by one estimate—current land conversion rates will develop more land over the next 40 years than has been developed in the past 400 years (Benedict *et al.* 2004). Undoubtedly, habitat loss and fragmentation cannot be stopped. Rather, their repercussions must be managed proactively via well-informed, comprehensive planning that recognizes the critical importance of conserving and managing terrestrial and aquatic species habitats and the ecosystem functions they help constitute. This function is the foundation for a healthy Green Infrastructure.

Two major ideas have become clearer alongside our understanding of the impacts of habitat loss and fragmentation. First, most land conservation happens locally. This is due in part to the fact that specific decisions about how parcels of land will be used are made locally, and at this level, public input and funding possibilities are most closely linked with the conservation of a specific place. Second, all lands/resources are not equal in their contribution to a healthy functioning ecological network. Each conservation opportunity displays a unique set of conservation values that can be used to weigh the benefits of conserving one parcel over another. Considering the reality that funding for conservation is typically very limited at the local level, having tools to identify conservation opportunities that maximize our ability to conserve and manage the most important areas in the most financially sound ways is key.

With several tools for mapping conservation priorities, local planners needed to fully evaluate all available options at the risk of under representing a specific conservation perspective. VEVA synthesizes multiple conservation, wildlife and aquatic data layers presenting a unified method of prioritizing conservation opportunities.

Links for more resource information:

Virginia Ecological Value Assessment:

<http://www.dgif.virginia.gov/gis/>

Priority Conservation Areas:

http://www.dgif.virginia.gov/gis/moms/november2009/PCA_MapGallery.pdf

VCU Interactive Stream Assessment:

<http://instar.vcu.edu/>

Virginia Healthy Waters:

http://www.dcr.virginia.gov/soil_and_water/healthy_waters/index.shtml

<http://instar.vcu.edu/>

Virginia Wildlife Action Plan:

<http://bewildvirginia.org/>

DCR-DNH Conservation Sites

http://www.dcr.virginia.gov/natural_heritage/infoservices.shtml

VIMS Center for Coastal Resource Management:
<http://ccrm.vims.edu/gisdatabases.html>

How is this resource managed?

There are multiple resources which are integrated into VEVA. Each of these resources are managed by different entities and through different measures.

The DGIF Priority Wildlife Conservation Areas contain wildlife habitat information of species in the Virginia Wildlife Action Plan. VA DGIF enforces the laws, regulations, and guidelines governing the collection, holding, exhibiting, and release of wildlife by issuing permits and guidelines for these activities. Specific laws and regulations are found in the Code of Virginia and the Virginia Administrative Code. For answers to specific questions about wildlife, fisheries, or boating laws and regulations, please contact the Virginia Department of Game and Inland Fisheries.

The DCR-DNH conservation sites are based upon data pertaining to the location of, viability of, quality of and threats to populations of rare plant species and rare animal species, as well as natural communities. Conservation Sites data (spatial and tabular) are managed by the DCR-DNH and are continually updated based on new and revised data from field biologists and from data sharing partners. The DCR-DNH Natural Land Network is derived from the Virginia Natural Landscape Assessment (VaNLA). The VaNLA is a conservation planning tool managed by the DCR-DNH and updated upon the availability of revised input datasets and reference layers.

Healthy waters are protected through the anti-degradation clause of the Clean Water Act.

Links for more information on management of the resource:

Clean Water Act. <http://www.epa.gov/watertrain/cwa/>

Virginia Wildlife Laws and Regulations: <http://www.dgif.virginia.gov/wildlife/laws/>

U.S. Fish and Wildlife Endangered Species Program:

<http://www.fws.gov/endangered/wildlife.html>

Why was this data created?

Virginia natural resources agencies have independently quantified important conservation opportunities. Specific conservation tools used for this purpose include the Virginia Conservation Lands Need Assessment (VCLNA) which was developed by the Virginia Department of Conservation and Recreation – Division of Natural Heritage (DCR-DNH) and the Virginia Wildlife Action Plan, developed by the Virginia Department of Game and Inland Fisheries (DGIF). Both the Ecological Model (the Virginia Natural Landscape Assessment or VaNLA) of the VCLNA and the mapped tiered-species habitats from the Wildlife Action Plan identified conservation priorities spatially. However, each of these efforts were formed with different perspectives and assumptions and therefore, presented very different results. Concurrently, Virginia Commonwealth University's Center for Environmental Studies (VCU-CES) has developed methods to rate aquatic resource integrity based on fish and macro-invertebrate community sampling and VIMS Center for Coastal Resource Management has identified important Coastal Resources through their Cumulative Resource Assessment. These data provided another way to identify conservation priorities.

With several tools for mapping conservation priorities, local planners needed to fully evaluate all available options at the risk of under representing a specific conservation perspective. Synthesis was needed to present a unified method of prioritizing conservation opportunities.

This project is the result of a partnership between VCU-CES, DCR-DNH, DCR Soil and Water, VIMS Center for Coastal Resources Management and DGIF to fulfill the need to provide a single collaborative approach to mapping conservation opportunities.

Links to projects that funded this data:

<http://www.deq.state.va.us/coastal/description/2008projects/11-02-08.html>

How was this data created? *(in paragraph form, provide a brief metadata. Discuss incorporated datasets, project partners, basic methodology, and what the final dataset shows)*

Priority Wildlife Diversity Conservation Areas were developed by the VA Department of Game and Inland Fisheries. Data from habitat maps, Colonial Waterbird surveys, DCR-DNH's VCLNA, USGS National Hydrography Dataset, USFWS National Wetlands Inventory, Audubon's Important Bird Areas, and other datasets were compiled using input from DGIF biologists and guidance from the Wildlife Action Plan. Data was created in GRID format and ranks were associated with the data from a scale of 1 (low priority) to 5 (high priority). Virginia DCR-DNH prepared two data layers from data in the Natural Heritage Plan to contribute to the PCA compilation. These layers were selected because together they provide a fine filter and a coarse filter conservation planning tool. In short, coarse filter tools are designed to conserve high percentages of species by conserving adequate diversity, distribution, and abundance of ecological communities, ecological land units (e.g., alliances of ecological communities, physical environments and landscape-level ecological phenomena). Coarse filter tools are complimented by fine filter approaches, which focus on specific habitats of individual rare species, or species that specialize on a small and/or unique habitat type. For the PCA, DCR-DNH prepared data layers derived from DCR-DNH Conservation Sites (Conservation Sites ranked by biodiversity rank; fine filter) and the Virginia Natural Landscape Assessment (VaNLA) (Virginia Natural Land Network; coarse filter).

The aquatic resource integrity layer was developed by VCU Center for Environmental Studies using stream based ecological data, the INSTAR stream reaches (<http://instar.vcu.edu>), and watershed based health data (<http://instar.vcu.edu>). The watershed based health data are the Healthy Waters watershed layer, which are watersheds generated for each healthy water in Virginia. The National Hydrography Dataset (high resolution) was assigned a watershed health value based on the Healthy Waters watershed rank. The datasets were mosaiced together to create a blue infrastructure layer with ranks of 2(low integrity) - 5 (high integrity).

The PCA input datasets were combined using the majority tool. A majority filter was run on the final dataset to smooth the data. The final Priority Conservation Areas dataset shows entities ranked by conservation priority from a high of 5 to a low of 1.

The Cumulative Resource Assessment (CRA) was derived by VIMS Center for Coastal Resources Management and is a subset of the Aquatic Priority Conservation Areas dataset developed by CCRM. The CRA includes shellfish suitability data, reef restoration sites, oyster reef data, artificial fishing reef data, seed areas, aquaculture sites, turtle nest sites, submerged aquatic vegetation data and regulated area data. Ecological value was assigned to each data layer based on best professional judgment.

Future Directions *(in paragraph form, discuss continuations to the project, future updates to the dataset, and/or policies and other outcomes anticipated from use of the data)*

This project produced a synthesized dataset to guide conservation planning, assessed these areas for risk to development, demonstrated use of this tool within planning and visualization software, and transferred the knowledge to regional planning groups. It is anticipated that Planning District Commissions will use VEVA and other results of this project within their development of green infrastructure initiatives and to assist counties with comprehensive planning.

Frequently Asked Questions *(include as many questions, answers, and links to more information as you deem appropriate, but include at least one. These questions are common questions received by the agency from the public about a particular resource or project, and are intended to reduce the number of calls you field)*

Are there any access constraints to using the data?

No. The data are available to the public.

How can I access the data?

Can I access the individual components that were used in the creation of VEVA?

Yes. Contact the specific originator for details on how to access the individual data components. Use the link on the website and refer to the metadata for the individual component contact information.

Are there any disclaimers to using this data?

This dataset is intended to guide conservation planning and efforts. This dataset is not intended to replace on the ground surveys or consultations with biologists as appropriate.

Photo



Picture courtesy of:

<http://www.flickr.com/photos/vadcr/2388257680/in/set-72157603455969716/>