

# GIS Summary Report for a Public Web Based GIS Database Mapping of the Dolly Sods Wilderness Area: Monongahela National Forest, WV.

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## Final Report

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## 1.0 INTRODUCTION & BACKGROUND

The Dolly Sods Area is comprised of the Dolly Sods Wilderness Area (DSWA) and the Dolly Sods Scenic Area. Located in Grant, Randolph, and Tucker Counties of West Virginia, it is positioned between Canaan Valley and Seneca Rocks within the Monongahela National Forest (Figure 1). The Dolly Sods Area is on the Allegheny Plateau, and has elevations ranging from 2,600 to 4,100 feet. The Dolly Sods Region consists of more than 18,500 acres and is well known for its extensive rocky plains, upland bogs and sweeping vistas. The U.S. Army Corps of Engineers (USACE) reports that visitors to the area range from 45,000 to 76,000 annually. The remoteness, natural experience, and limited human influences attract adventurous hikers, mountain bikers, anglers, hunters, and berry pickers.

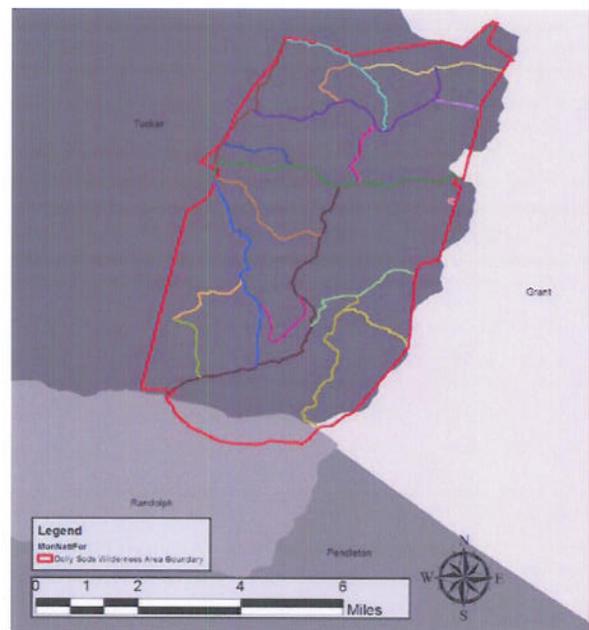


Figure 1. Dolly Sods Wilderness Area location in West Virginia.

Dolly Sods falls within the 2.18 million acre West Virginia Maneuver Area (WVMA), where during World War II, the Department of the Army trained troops in order to simulate conditions in the mountains of Italy. A portion of the training in the WVMA included a 50,000-acre Impact Area used for heavy artillery (105-mm howitzer rounds) and mortar (60-mm, 81-mm) firing ranges. The USACE, Huntington District, has project management responsibilities for the WVMA. This project is authorized under the Defense Environmental Restoration Program (DERP) Formerly Used Defense Sites (FUDS).

The USACE Huntington District, Environmental and Remediation Section (CELRH-EC-CE) contracted West Virginia University (WVU) to provide a Geographic Information System (GIS) website to permit public access to maps of the West Virginia Maneuver Area/Dolly Sods Formerly Used Defense Site (FUDS). Internally within WVU, this project had been a collaborate

effort involving the Department of Civil and Environmental Engineering and the West Virginia Water Research Institute (WVWRI). Previously developed GIS mapping of the WVMA/Dolly Sods FUDS Property provided the necessary framework for the creation of the GIS online mapping. This previous work included the Geographic Positioning Systems (GPS) data gathering of current trail/campsite conditions and Unexploded Ordnance (UXO)'s in the Dolly Sods area of the Monongahela National Forest.

## **2.0 OVERVIEW OF PROJECT REQUIREMENTS**

The project work scope required the development of a website for a GIS online map that would be user-friendly and informative open to public access and house on a WVU server. A Project-Specific Quality Control Plan (QCP) for all tasks/activities and products was also required.

## **3.0 PROJECT DELIVERABLES & OUTCOMES**

Prior to initiating any activities, WVU prepared and implemented an approved Project-Specific Quality Control Plan (QCP) for all tasks/activities and products. The QCP was prepared according to CELRHR 5-2-7, Quality Management Plan, ER 1110-1-2, Engineering and Design Quality Management, CELRDC 5-1-1 Quality Management Plan and the applicable ISO 9000 processes developed for this type of work. The QCP defined the responsibilities and roles of members on the Independent Quality Control Team (IQCT), along with those team members preparing or performing the tasks/activities.

Utilizing the previously developed GIS database, WVWRI established a website to serve as the platform for the interactive GIS online map. The DSWA map provides public users with a visual of the Dolly Sods Wilderness Area (DSWA), such as trails and established campsites illustrations of these maps are shown in Figure 2 & 3.

Detailed maps were developed that were suitable for large scale printing. Website usage was tracked and served as the basis for displaying the success of this project. A link to the website (<http://wwwri.nrcce.wvu.edu/dollysods/>) was placed on the USACE website (Figure 3) as well as low and high resolution static maps created by WVWRI. Public users of the site also have the option to view the trails and campsites with either an aerial, topographic, or street view background (Figure 4 A-C).



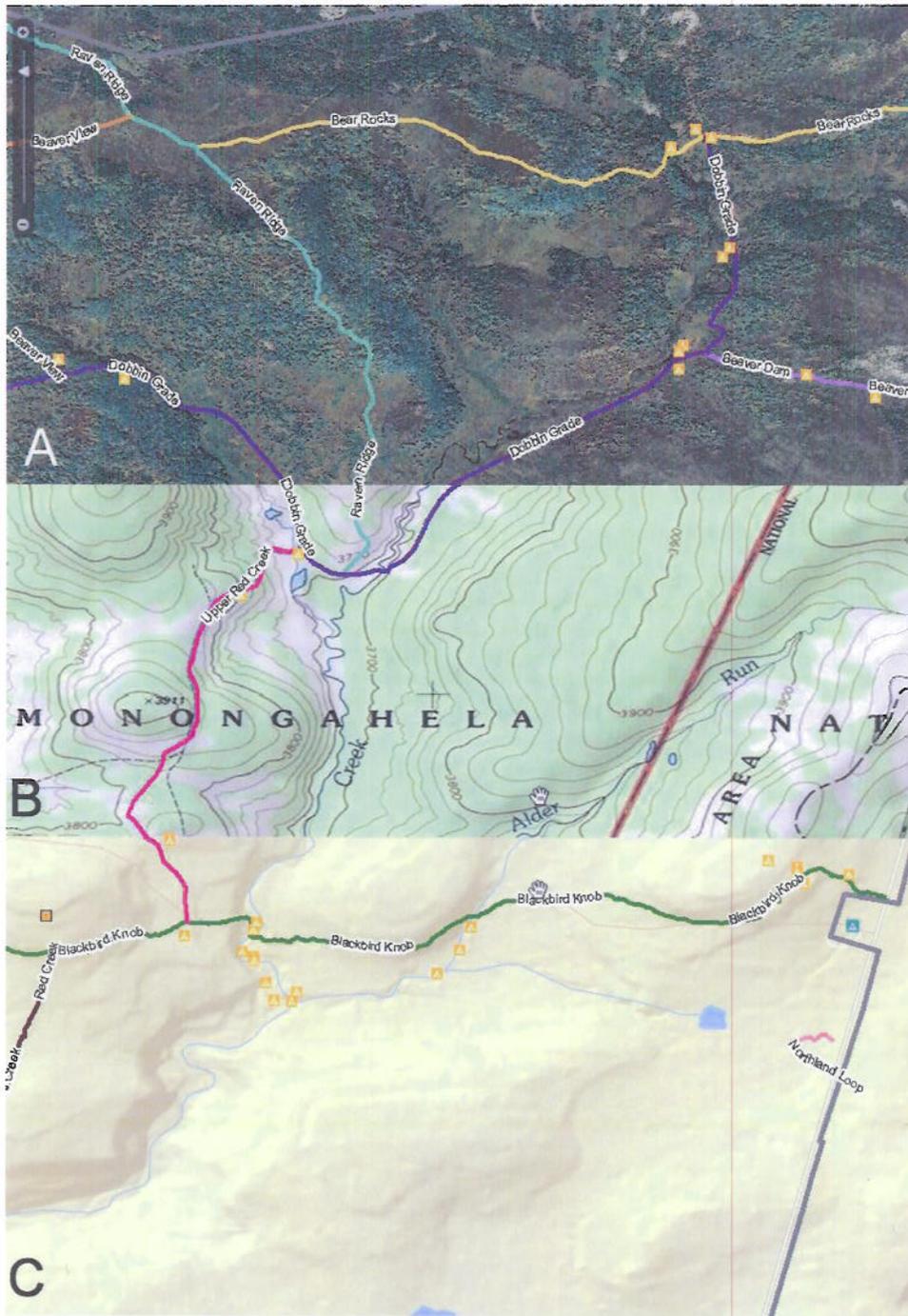
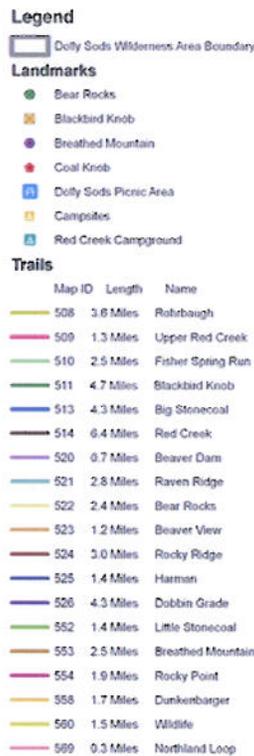


Figure 4. Aerial (A) , topographic (B), and street view (C) map background options for the Dolly Sods map website.

Trail names are labeled on the map and are both numbered and named in the legend. The USACE strongly encourages visitors of Dolly Sods to camp at cleared campsites identified on the provided map, and to stay within 20 foot of cleared trails. A disclaimer has been provided that states: "Trails and campsites identified in the legend have been cleared of Munitions and Explosives of Concern (MEC) by the U.S. Army Corps of Engineers (USACE). Note the trail markings on the background topographic map may be incorrect, so utilize the trails that are identified by the USACE in the map legend." Additionally, users can zoom in to view selected trails, and print the map by clicking on the "print map" button located under the disclaimer (Figure 5).



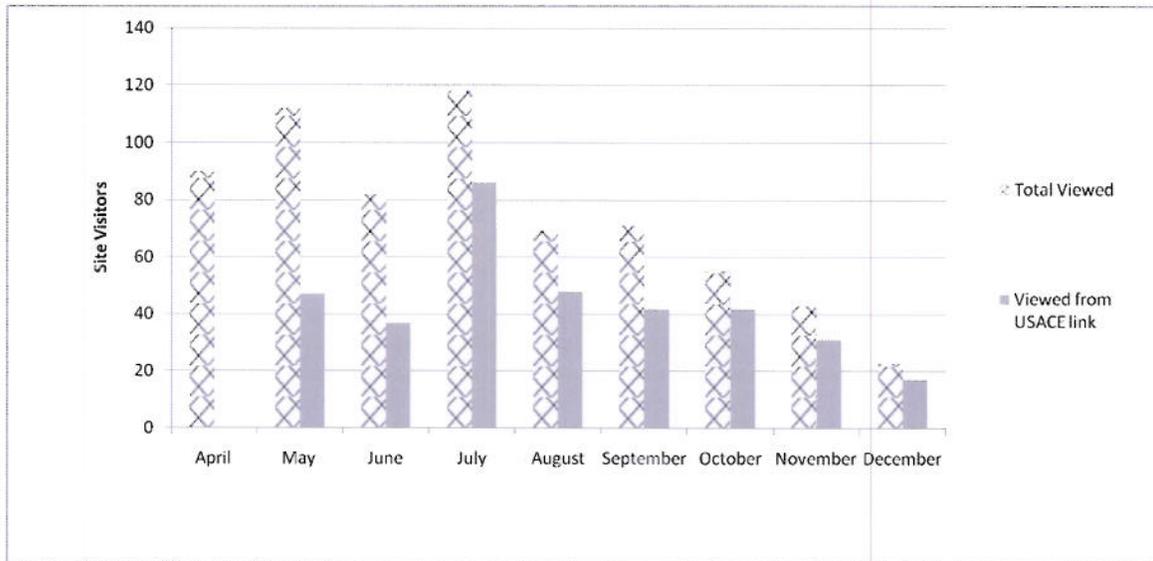
Trails and campsites identified in the legend have been cleared of Munitions and Explosives of Concern (MEC) by the U.S. Army Corps of Engineers (USACE). The USACE strongly encourages visitors of Dolly Sods to camp at cleared campsites identified on the provided map, and to stay within 20 foot of cleared trails. Please note the trail markings on the background topographic map may be incorrect, so utilize the trails that are identified by the USACE in the map legend.

[Print Map](#)

Figure 5. Map legend.

### Website Access Metrics

Website metrics were gathered using Advanced Web Statistics 6.6 (build 1.887). Traffic to the site was monitored on a monthly basis between April 1<sup>st</sup> and December 15<sup>th</sup> of 2010 when the link to the WRI website (<http://wwri.nrcce.wvu.edu/dollysods/>) was added to the USACE website. DSWA map website hits that came directly from the USACE page were tracked beginning in May, 2010 (Figure 6).



**Figure 6. DSWA website statistics compiled by Advanced Web Statistics.**

Total viewed statistics show that some hits on the DSWA website were likely the result of the link being saved as a bookmark in web browsers. Traffic to the site peaked in July, with 118 total views and 86 directly linked from the USACE website. As assumed, web traffic was higher during the summer months when usage of the DSWA was at its peak.

As users would have most likely discovered the link to the USACE site after any web searching, the WRI statistics program was unable to determine any search engine key words that may have brought users to the DSWA map website.

#### 4.0 CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

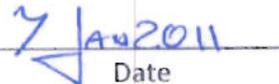
The West Virginia University Department of Civil and Environmental Engineering has completed a compliance and technical topical review of the final report for the project titled the Summary Report for a Public WEB Based GIS Database Mapping of the Dolly Sods Wilderness Area.

This review was conducted following measures established by the National Academies, for compliance with the Government Performance and Results Act of 1993. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of complexity inherent in the project as defined in the Project Proposal and Quality Control Plan for the project titled Geoenvironmental Assessment of Dolly Sods Trail Network for CERCLA Review.

During the review, compliance was reviewed with satisfactory adherence to the Work Scope deliverables, completeness of activities, review of assumptions, methods, procedures, and funding. The project inputs and outputs were evaluated in the context of the project and investment efficiency. The results of this review tend to indicate that the results obtained and level of analysis support the reasonableness of the results.

The outcome of this review indicates that the deliverables as a compiled product are consistent with the Scope of Work defining the customer's needs.

  
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Independent QC Reviewer

  
Date