DESCRIPTION OF DIGITAL FILES FOR GEOLOGIC MAP OF THE SAUVIE ISLAND QUADRANGLE, MULTNOMAH AND COLUMBIA COUNTIES, OREGON AND CLARK COUNTY, WASHINGTON

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INTRODUCTION

This readme document serves to introduce and describe the digital files that are included in this publication. They are available for downloading at http://dx.doi.org/10.3133/sim3349 and include Geographic Information System (GIS) software files (both raster and vector data) that are viewable with an Environmental Systems Research Institute (ESRI)-compatible commercial GIS (or with ESRI's ArcReader utility; a free map viewer with no editing capabilities) as well as Portable Document Format (PDF) files that are viewable with Adobe Acrobat Reader or a web browser plug-in available for free on the internet. Two download packages are available depending on the resources available to the user (see the section entitled "Scientific Investigations Map 3349 Digital Contents" below for details). For those interested only in a paper plot of the Scientific Investigations Map, please see the section entitled "Obtaining Paper Plots" below.

This digital map publication, generated from new mapping by the authors, shows the general distribution of bedrock and surficial deposits in the Sauvie Island 7.5' quadrangle. Together with the accompanying descriptive and interpretive pamphlet, it presents current knowledge of the geologic structure and stratigraphy of the area covered. The database identifies map units that are classified by general age and lithology following the stratigraphic nomenclature used by the U.S. Geological Survey. The scale of the source map limits the spatial resolution (scale) of the database to 1:24,000 or smaller. The content and character of the digital publication, as well as methods of obtaining the digital files, are described below.

SCIENTIFIC INVESTIGATIONS MAP 3349 DIGITAL CONTENTS

The digital data for this Scientific Investigations Map consists of:

1. A **Geodatabase** package that contains geologic vector and tabular data stored as data objects within an ESRI-format personal geodatabase, raster data stored as ESRI-format DRG-TIFF, an ESRI map document for use with ArcGIS 10.0 that allows editing and rendering of the data sources, an ESRI published map document for use with ArcReader that allows viewing and querying of the source data along with metadata, and an ArcGIS style for symbolizing the map.
2. A **Shapefile** package that contains shapefiles exported from the personal geodatabase and the same ESRI DRG-TIFF as in the Geodatabase package along with supporting files. This package does not contain annotation layers included in the Geodatabase package due to software limitations.
3. A metadata file for the entire database.
4. **PDF** files of the map sheet, base map, and pamphlet.

Each package has been compressed into a single file (.zip extension) using WinZip, a freely downloadable compression software utility (download from http://www.winzip.com. Each compressed file will uncompress into a folder containing the associated files.

If you:

- Have access to ArcGIS 10.1, download the Geodatabase package and open the map document (.mxd extension) from ArcGIS.
- Have access to ArcView 3.x (or a GIS that can read shapefiles), download the Shapefile package.
- Do not have access to a GIS but wish to view and query the data, download the Geodatabase package and open the published map document (.pmf extension) from ArcReader (free download from http://www.esri.com).
- Do not have access to a GIS and only wish to print the map sheet or parts of it, download the PDF package and open them with Adobe Reader 10.0 or later (free download from http://www.adobe.com). Note that the map sheet is approximately 36 x 56 inches and will require a large-format plotter.
- Only wish to have a paper copy of this Scientific Investigations Map, see the section entitled "Obtaining Paper Plots" below.

1.GEODATABASE PACKAGE

sim3349_db.zip

Sauvie_Island.mdb An ESRI personal geodatabase with simple feature classes:

Feature Classes	Description
SI_Contacts	A line feature class representing geologic contacts
SI_Unit_polys	A polygon feature class representing geologic units
SI_Structure	A point feature class representing bedding measurements
SI_folds_faults	A line feature class representing fold axes and faults and cross section line
SI_Chem	A point feature class representing geochemical data sites
SI_Pmag	A point feature class representing paleomagnetic data sites
SI_Lumin	A point feature class representing thermoluminescence ages
SI_Radiocarbon	A point feature class representing radiocarbon ages
SI_wells_xsec	A point feature class representing sites of well logs used to construct cross sections
Sauvie_DMU	A table of unit descriptions for the SI_Unit_polys

Sauvie_Island.mxd Map document created in ArcGIS 10.1 containing the data rendering and symbolization information that was used in the production of the Scientific Investigations Map sheet. For this release, the layers were grouped logically and given aliases in order to be more usable

Sauvie_Island.pmf Published map document created from Sauvie_Island.mxd for use with ERSI ArcReader. It contains all of the same rendering and symbolization information that is in the original .mxd. Features may be queried with the identify tool in the same way they could in the .mxd, but there are no editing capabilities with this utility

Sauvie_Island.style Custom style file used to symbolize lines, polygons, and points

Sauvie_Island.tif TIFF file of the base map

2.SHAPEFILE PACKAGE

sim3349_shp.zip

Shapefiles **Description**

SI_Contacts.shp A line shapefile of the contacts feature class exported from the geodatabase (see Geodatabase Package above)

SI_Unit_polys.shp A polygon shapefile of the unit-polygons feature class exported from the geodatabase (see Geodatabase Package above)

SI_Structure.shp A point shapefile of the structural points feature class exported from the geodatabase (see Geodatabase Package above)

SI_folds_faults.shp A line shapefile of the folds and faults with a cross-section feature class exported from the geodatabase (see Geodatabase Package above)

SI_Chem.shp A point shapefile of the geochemical data feature class exported from the geodatabase (see Geodatabase Package above)

SI_Pmag.shp A point shapefile of the paleomagnetic data feature class exported from the geodatabase (see Geodatabase Package above)

SI_Radiocarbon.shp A point shapefile of the radiocarbon ages feature class exported from the geodatabase (see Geodatabase Package above)

SI_Lumin.shp A point shapefile of the thermoluminescence ages feature class exported from the geodatabase (see Geodatabase Package above)

SI_wells_xsec.shp A point shapefile of the wells feature class exported from the geodatabase (see Geodatabase Package above)

Map document files

Sauvie_Island.style Custom style file used to symbolize lines, polygons, and points

Sauvie_Island.tif Custom base map

3.METADATA

Files	**Description**
SauvieIsland_MDB_metadata.txt	Metadata for the geodatabase, SauvieIsland.mdb
Geology_FDS_metadata.txt	Metadata for the Feature Data Set, Geology
SI_Chem_metadata.txt	Metadata for the Feature Class, SI_Chem
SI_wells_xsec_metadata.txt	Metadata for the Feature Class, SI_wells_xsec
SI_Unit_polys_metadata.txt	Metadata for the Feature Class, SI_Unit_polys
SI_Structure_metadata.txt	Metadata for the Feature Class, SI_Structure
SI_Radiocarbon_metadata.txt	Metadata for the Feature Class, SI_Radiocarbon
SI_Pmag_metadata.txt	Metadata for the Feature Class, SI_Pmag
SI_Lumin_metadata.txt	Metadata for the Feature Class, SI_Lumin
SI_folds_faults_metadata.txt	Metadata for the Feature Class, SI_folds_faults
SI_Contacts_metadata.txt	Metadata for the Feature Class, SI_Contacts
Sauvie_DMU_metadata.txt	Metadata for the table, Sauvie_DMU

4.PORTABLE DOCUMENT FORMAT (ADOBE ACROBAT 7.0) FILES

Files	**Description**
sim3349_sheet1.pdf	A PDF file containing an image of the map sheet, exported from Adobe Illustrator
sim3349_pamphlet.pdf	Explanatory pamphlet

OBTAINING THE DIGITAL DATA

The digital data for this map can be obtained in two ways:

1) Download from the U.S. Geological Survey Web Site

2) Request a compact disc (CD) of the files

1) TO OBTAIN THE FILES FROM THE U.S. GEOLOGICAL SURVEY WEB SITE: The U.S. Geological Survey supports a set of graphical pages on the World Wide Web. Digital publications (including this one) can be accessed via these pages. The location of the main Web page for the U.S. Geological Survey is http://www.usgs.gov. The Web server for digital publications is http://www.usgs.gov. To access files for this Scientific Investigations Map, go to http://dx.doi.org/10.3133/sim3349.

2) TO OBTAIN A CD OF THE FILES:
A CD of any or all of the digital files described here can be obtained by sending a request and return address to: Zenon Valin or Russell C. Evarts
U.S. Geological Survey
345 Middlefield Road, M/S 973
Menlo Park, CA 94025
or by email: *zenon@usgs.gov* or *revarts@usgs.gov*

OBTAINING PAPER PLOTS

TO OBTAIN PLOTS FROM A COMMERCIAL VENDOR:
First obtain the PDF package via a download or by requesting a CD of the PDF package as described above. Take that package to a commercial vendor with a large-format plotter. Make sure the vendor is capable of reading CDs and PDF files and provide the vendor with a copy of this document.

TO OBTAIN PAPER PLOTS FROM THE U.S. GEOLOGICAL SURVEY:
The U.S. Geological Survey provides a print on demand service for digital maps such as this report. To obtain plots, contact the U.S. Geological Survey:

USGS Information Services
Box 25286
Denver Federal Center
Denver, CO 80225-0046
(303) 202-4200
1-888-ASK-USGS
FAX: (303) 202-USGS
e-mail: infoservices@usgs.gov

Be sure to include with your request the Scientific Investigations Map number 3349.

DIGITAL COMPILATION

Several different feature classes were generated within a geodatabase during the construction of the Sauvie Island quadrangle geologic map. The topographic base map remains as a digital raster and is overlain on the geology feature class in ArcMap at a 50% transparency level. The hillshade image is overlain on the geology feature class at a 20% transparency level. Some custom menus were used to project, transform, edit, tag, and build points in the map. A digital layout or map collar was made with Adobe Illustrator. The map was exported from the layout view in ArcMap as an Adobe Illustrator file and added to a single Adobe Illustrator file that also contained the description of map units, correlation of map units, cross sections, and an index map. Differences between the maps as they appear in the final map sheet and as they appear in the either the .mxd or .pmf files represent changes made in the Adobe Illustrator file to the symbology only and do not reflect any changes in the actual source data. The map is in Universal Transverse Mercator (UTM) projection, NAD83 datum, zone 10, meters, and 1:24,000 scale. The explanatory pamphlet was saved to PDF from Microsoft Word.

BASE MAP

The base map for the digital compilation is a custom map of the Sauvie Island quadrangle complied in Adobe Illustrator. A hillshade image and 50-foot contours were generated in ArcGIS from lidar data acquired by the US Army Corps of Engineers in 2005 and 2009, and by Clark County, Washington in 2001, The data were georeferenced to Universal Transverse Mercator projection, NAD83 datum and imported into Illustrator. Water bodies, cultural features, political boundaries, and the UTM grid were obtained from the 2011 USGS Sauvie Island topographic quadrangle. Stream courses were hand-drawn from the lidar data and some roads were modified to be consistent with the lidar data. The Public Lands Survey System grid was downloaded from the Bureau of Land Management website. To avoid gaps and overlaps with published geologic maps of adjacent areas, the geology was compiled to NAD27 quadrangle boundaries. The base map layer is a digital image, but no information other than location is attached to the lines. The base map is provided for reference only.

SPATIAL RESOLUTION

Uses of this digital geologic map should not violate the spatial resolution of the data. Although the digital form of the data removes the constraint imposed by the scale of a paper map, the detail and accuracy inherent in map scale are also present in the digital data. The fact that this database was edited at a scale of 1:24,000 means that higher resolution information is not present in the dataset. Plotting at scales larger than 1:24,000 will not yield greater real detail, although it may reveal fine-scale irregularities below the intended resolution of the database. Similarly, where this database is used in combination with other data of higher resolution, the resolution of the combined output will be limited by the lower resolution of these data.

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