This stream layer is a modified version of the USGS NHDPlus Version 2 stream flowline data. These data are intended to be used with two spatial statistical toolsets called STARS and SSN (Peterson E.E. and Ver Hoef J.M. 2014, and Ver Hoef J.M. and Peterson E.E. 2010). The purpose of the toolsets is to model biological and physical characteristics of stream networks using digital stream line data. To implement the toolsets it is necessary that the streams data are specifically structured to ensure that hydrologic distances and spatial relationships are calculated properly. The STARS toolbox (version 2.0.1) and ArcGIS software were used to identify and modify topological entities of this stream line network so that users may utilize the data directly with the spatial statistical tools. More information about STARS and SSN may be obtained at: [http://www.fs.fed.us/rm/boise/AWAE/projects/SpatialStreamNetworks.shtml](http://www.fs.fed.us/rm/boise/AWAE/projects/SpatialStreamNetworks.shtml)

This stream layer is a modified version of the USGS NHDPlus Version 2 (NHDPlusV2) stream flowline data. The original geospatial data included in the NHDPlusV2 are intended to support a variety of water-related applications. [U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS)]. This modified version is intended to be used with the STARS and SSN statistical toolsets (Peterson E.E. and Ver Hoef J.M. 2014, Ver Hoef J.M. and Peterson E.E. 2010). The NHDPlusV2 stream network was simplified by removing braids and diverging channels, as well as modifying confluences with more than two tributaries (complex confluences). Locations where more than 2 segments joined at a stream junction were separated and snapped to a newly created node more than 25 meters downstream. Where possible, the segment with the smallest contributing area (TotDASqKM) value was moved. Where multiple stream segments converged into sinks, the terminal end nodes were moved 25 meters apart. In addition, segments where nodes created downstream divergences or where stream flow converged were separated as deemed most appropriate. This simplification of the stream network supports statistical calculations with the STARS Toolbox while maintaining the majority of network features for modeling purposes.


U.S. Forest Service, Rocky Mountain Research Station, Air, Water, and Aquatic Environments Program, Boise, ID

Use limitations

The USDA Forest Service makes no warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose, nor assumes any legal liability or responsibility for the accuracy, reliability, completeness or utility of these geospatial data, or for the improper or incorrect use of these geospatial data. These geospatial data and related maps or graphics are not legal documents and are not intended to be used as such. The data and maps may not be used to determine title, ownership, legal descriptions or boundaries, legal jurisdiction, or restrictions that may be in place on either public or private land. Natural hazards may or may not be depicted on the data and maps, and land users should exercise due caution. The data are dynamic and may change over time. The user is responsible to verify the limitations of the geospatial data and to use the data accordingly.

Extent

West -89.416125  East -77.729028
North 43.392479  South 34.634492

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

ArcGIS Metadata

Topics and Keywords

* CONTENT TYPE Downloadable Data
  EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No

PLACE KEYWORDS United States
THEME KEYWORDS Rivers, streams

Citation

TITLE Ohio VPU 05 (MS Drainage Area ID) Prediction Points - National Stream Internet
CREATION DATE 2015-01-13 00:00:00
PRESENTATION FORMATS * digital map
OTHER CITATION DETAILS

Citation Contacts

RESPONSIBLE PARTY
  INDIVIDUAL’S NAME David Nagel
  ORGANIZATION’S NAME U.S. Forest Service
  CONTACT’S POSITION GIS Analyst
  CONTACT’S ROLE publisher

Resource Details

DATASET LANGUAGES * English (UNITED STATES)
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format
**SPATIAL REPRESENTATION TYPE**  vector

**SPATIAL RESOLUTION**
**DATASET'S SCALE**
**SCALE DENOMINATOR**  1:100,000

* **PROCESSING ENVIRONMENT**  Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.2.1.3497

**CREDITS**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

http://www.horizon-systems.com/NHDPlus/NHDPlusV2_data.php

U.S. Forest Service, Rocky Mountain Research Station, Air, Water, and Aquatic Environments Program, Boise, ID

**ARCGIS ITEM PROPERTIES**
* **NAME**  PredictionPoints_MS05_NSI
* **SIZE**  4.525
* **LOCATION**  file://\SXBOINAS001\Rdrive\Workspace\NationalStreamInternet\VPU_Distribution\VPU_05\PredictionPoints_MS05_NSI.shp
* **ACCESS PROTOCOL**  Local Area Network

Hide Resource Details ▲

**Extents ▶**

**EXTENT**
**GEOGRAPHIC EXTENT**
**BOUNDING RECTANGLE**

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<thead>
<tr>
<th>EXTENT TYPE</th>
<th>Extent used for searching</th>
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</thead>
<tbody>
<tr>
<td><strong>WEST LONGITUDE</strong></td>
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</tr>
<tr>
<td><strong>EAST LONGITUDE</strong></td>
<td>-77.729028</td>
</tr>
<tr>
<td><strong>NORTH LATITUDE</strong></td>
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</tr>
<tr>
<td><strong>SOUTH LATITUDE</strong></td>
<td>34.634492</td>
</tr>
</tbody>
</table>

* **EXTENT CONTAINS THE RESOURCE**  Yes

**EXTENT IN THE ITEM’S COORDINATE SYSTEM**

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<td>SOUTH LATITUDE</td>
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</tr>
<tr>
<td>NORTH LATITUDE</td>
<td>2289343.304900</td>
</tr>
</tbody>
</table>

* **EXTENT CONTAINS THE RESOURCE**  Yes

Hide Extents ▲

**Resource Maintenance ▶**

**RESOURCE MAINTENANCE**
**UPDATE FREQUENCY**  not planned

Hide Resource Maintenance ▲

**Resource Constraints ▶**

**CONSTRAINTS**

**LIMITATIONS OF USE**
The USDA Forest Service makes no warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose, nor assumes any legal liability or responsibility for the accuracy, reliability, completeness or utility of these geospatial data, or for the improper or incorrect use of these geospatial data. These geospatial data and related maps or graphics are not legal documents and are not intended to be used as such. The data and maps may not be used to determine title, ownership, legal descriptions or boundaries, legal jurisdiction, or restrictions that may be in place on either public or private land. Natural hazards may or may not be depicted on the data and maps, and land users should exercise due caution. The data are dynamic and may change over time. The user is responsible to verify the
limitations of the geospatial data and to use the data accordingly.

Spatial Reference

**ARCGIS COORDINATE SYSTEM**
- **TYPE** Projected
- **GEOGRAPHIC COORDINATE REFERENCE** GCS_North_American_1983
- **PROJECTION** NAD_1983_Albers
- **COORDINATE REFERENCE DETAILS**
  - **PROJECTED COORDINATE SYSTEM**
    - **X ORIGIN** -16901100
    - **Y ORIGIN** -6972200
    - **XY SCALE** 266467840.99085236
    - **Z ORIGIN** -100000
    - **Z SCALE** 10000
    - **M ORIGIN** -100000
    - **M SCALE** 10000
    - **XY TOLERANCE** 0.001
    - **Z TOLERANCE** 0.001
    - **M TOLERANCE** 0.001
    - **HIGH PRECISION** true
  - **WELL-KNOWN TEXT** PROJCS["NAD_1983_Albers",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Albers"],PARAMETER["False_Easting",0.0],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",-96.0],PARAMETER["Standard_Parallel_1",29.5],PARAMETER["Standard_Parallel_2",45.5],PARAMETER["Latitude_Of_Origin",23.0],UNIT["Meter",1.0]]

**REFERENCE SYSTEM IDENTIFIER**
- **VALUE** 0

Spatial Data Properties

**VECTOR**
- **LEVEL OF TOPOLOGY FOR THIS DATASET** geometry only

**GEOMETRIC OBJECTS**
- **FEATURE CLASS NAME** PredictionPoints_MS05_NSI
- **OBJECT TYPE** point
- **OBJECT COUNT** 169463

**ARCGIS FEATURE CLASS PROPERTIES**
- **FEATURE CLASS NAME** PredictionPoints_MS05_NSI
- **FEATURE TYPE** Simple
- **GEOMETRY TYPE** Point
- **HAS TOPOLOGY** FALSE
- **FEATURE COUNT** 169463
- **SPATIAL INDEX** TRUE
- **LINEAR REFERENCING** FALSE

Distribution

**DISTRIBUTION FORMAT**
- **NAME** Shapefile

**TRANSFER OPTIONS**
- **TRANSFER SIZE** 4.525

Fields

**DETAILS FOR OBJECT PredictionPoints_MS05_NSI**
- **TYPE** Feature Class
- **ROW COUNT** 169463
**DEFINITION**
NHD Flowline for the entire NHD Version 2 Plus 11 RPU
**DEFINITION SOURCE**
USDA Forest Service RMRS Boise Aquatic Sciences Lab

**FIELD FID**
- **ALIAS**: FID
- **DATA TYPE**: OID
- **WIDTH**: 4
- **PRECISION**: 0
- **SCALE**: 0
**FIELD DESCRIPTION**
Internal feature number.

**DESCRIPTION SOURCE**
Esri

**DESCRIPTION OF VALUES**
Sequential unique whole numbers that are automatically generated.

*Hide Field FID*

**FIELD Shape**
- **ALIAS**: Shape
- **DATA TYPE**: Geometry
- **WIDTH**: 0
- **PRECISION**: 0
- **SCALE**: 0
**FIELD DESCRIPTION**
Feature geometry.

**DESCRIPTION SOURCE**
Esri

**DESCRIPTION OF VALUES**
Coordinates defining the features.

*Hide Field Shape*

**FIELD COMID**
- **ALIAS**: COMID
- **DATA TYPE**: Integer
- **WIDTH**: 9
- **PRECISION**: 9
- **SCALE**: 0
**FIELD DESCRIPTION**
Native NHDPlus attribute. A unique ID for each NHD event assigned during the central NHD update process.

**DESCRIPTION SOURCE**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

*Hide Field COMID*

**FIELD FDATE**
- **ALIAS**: FDATE
- **DATA TYPE**: Date
- **WIDTH**: 8
- **PRECISION**: 0
- **SCALE**: 0
**FIELD DESCRIPTION**
NHDPlus attribute. Feature currency date. The date that the stream line location feature was updated in the NHDPlus database.

**DESCRIPTION SOURCE**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

**FIELD RESOLUTION**

- **ALIAS** RESOLUTION
- **DATA TYPE** String
- **WIDTH** 7
- **PRECISION** 0
- **SCALE** 0

**FIELD DESCRIPTION**
NHDPlus attribute. NHD database resolution (i.e. "high", "medium" or "local")

**DESCRIPTION SOURCE**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

**FIELD GNIS_ID**

- **ALIAS** GNIS_ID
- **DATA TYPE** String
- **WIDTH** 10
- **PRECISION** 0
- **SCALE** 0

**FIELD DESCRIPTION**
NHDPlus attribute. Geographic Names Information System ID for the value in GNIS_Name

**DESCRIPTION SOURCE**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

**FIELD GNIS_NAME**

- **ALIAS** GNIS_NAME
- **DATA TYPE** String
- **WIDTH** 65
- **PRECISION** 0
- **SCALE** 0

**FIELD DESCRIPTION**
NHDPlus attribute. Feature Name from the Geographic Names Information System

**DESCRIPTION SOURCE**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

**FIELD LENGTHKM**

- **ALIAS** LENGTHKM
- **DATA TYPE** Double
- **WIDTH** 19
- **PRECISION** 0
- **SCALE** 0

**FIELD DESCRIPTION**
NHDPlus attribute. Feature length in kilometers as measured in the NHDPlus database. This length reflects the feature length before the National Stream Internet reconditioning process was completed.

**DESCRIPTION SOURCE**
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).
FIELD REACHCODE ★
* ALIAS REACHCODE
* DATA TYPE String
* WIDTH 14
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
NHDPlus attribute. Reach Code assigned to feature.

DESCRIPTION SOURCE
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

Hide Field REACHCODE ★

FIELD FLOWDIR ★
* ALIAS FLOWDIR
* DATA TYPE String
* WIDTH 15
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
NHDPlus attribute. Flow direction is "With Digitized" or "Uninitialized" Only flowlines with FlowDir = "With Digitized" are used to define the surface water network for the National Stream Internet. All other flowlines are deleted.

DESCRIPTION SOURCE
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

Hide Field FLOWDIR ★

FIELD FTYPE ★
* ALIAS FTYPE
* DATA TYPE String
* WIDTH 24
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
NHDPlus attribute. NHD Feature Type.

DESCRIPTION SOURCE
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

Hide Field FTYPE ★

FIELD FCODE ★
* ALIAS FCODE
* DATA TYPE Integer
* WIDTH 9
* PRECISION 9
* SCALE 0
FIELD DESCRIPTION
NHDPlus attribute. Numeric codes for various feature attributes in the NHDFCode lookup table.

DESCRIPTION SOURCE
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

Hide Field FCODE ★

FIELD AreaSqKM ★
* ALIAS AreaSqKM
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
NHDPlus attribute. Reach catchment area in square kilometers as computed in the NHDPlus database, Exception: where DUP_COMID = 1, AreaSqKM was calculated to 0 for the National Stream Internet dataset.

DESCRIPTION SOURCE
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

ACCURACY INFORMATION
ACCURACY A value of 0 (zero) is given to segments that were creating while splitting the original NHD Plus version 2 and creating a new duplicate segment.

FIELD TotDASqKM
* ALIAS TotDASqKM
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
NHDPlus attribute. Total Upstream Cumulative Drainage Area, in square kilometers, at the downstream end of the NHDFlowline feature.

DESCRIPTION SOURCE
U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS).

FIELD DUP_COMID
* ALIAS DUP_COMID
* DATA TYPE Integer
* WIDTH 9
* PRECISION 9
* SCALE 0
FIELD DESCRIPTION
National Stream Internet attribute. Indicates a duplicate COMID created by splitting the original segment to correct the complex confluence issue. DUP_COMID = 1 for the short segment that was created by splitting. All other segments have DUP_COMID = 0.

DESCRIPTION SOURCE
USDA Forest Service RMRS Boise Aquatic Sciences Lab

ACCURACY INFORMATION
ACCURACY A value of "1" indicates that the original NHDPlus version 2 segment was split,

FIELD DUP_ArSqKM
* ALIAS DUP_ArSqKM
* DATA TYPE Double
* WIDTH 17
* PRECISION 16
* SCALE 4
FIELD DESCRIPTION
National Stream Internet attribute. This value is the ArSqKM value for the original stream segment before it was split to modify complex confluences.

DESCRIPTION SOURCE
USDA Forest Service RMRS Boise Aquatic Sciences Lab

FIELD DUP_Length
* ALIAS DUP_Length
* DATA TYPE Double
FIELD DESCRIPTION
National Stream Internet attribute. This value is the calculated length (in kilometers) of the new segment after the segment was split to modify complex confluences.

DESCRIPTION SOURCE
USDA Forest Service RMRS Boise Aquatic Sciences Lab

* Hide Field DUP_Length

* Hide Details for object PredictionPoints_MS05_NSI

* Hide Fields

Metadata Details

* METADATA LANGUAGE English (UNITED STATES)
METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset
SCOPE NAME dataset

* LAST UPDATE 2015-07-28

ARCGIS METADATA PROPERTIES
METADATA FORMAT ArcGIS 1.0
METADATA STYLE FGDC CSDGM Metadata
STANDARD OR PROFILE USED TO EDIT METADATA FGDC

CREATED IN ARCGIS FOR THE ITEM 2014-12-16 13:46:18
LAST MODIFIED IN ARCGIS FOR THE ITEM 2015-07-28 15:37:30

AUTOMATIC UPDATES
HAVE BEEN PERFORMED Yes
LAST UPDATE 2015-07-28 15:37:30

ITEM LOCATION HISTORY
ITEM COPIED OR MOVED 2014-12-16 13:46:18
FROM R:\Workspace\NationalStreamInternet\VPU_Working\VPU_05\05a\Flowline05a_NSI
TO \\SXBOINAS001\Rdrive\Workspace\NationalStreamInternet\VPU_Distribution\VPU_05\05a\Flowline05a_NSI

* Hide Metadata Details

Metadata Contacts

METADATA CONTACT
INDIVIDUAL'S NAME David Nagel
ORGANIZATION'S NAME U.S. Forest Service, Rocky Mountain Research Station, AWAE Program
CONTACT'S POSITION GIS Analyst
CONTACT'S ROLE publisher

CONTACT INFORMATION
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VOICE 208-373-4391

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TYPE both
DELIVERY POINT 322 East Front St; Suite 401
CITY Boise
ADMINISTRATIVE AREA ID
POSTAL CODE 83702
METADATA CONTACT
INDIVIDUAL'S NAME  Sharon (Parkes) Payne
ORGANIZATION'S NAME  USDA Forest Service RMRS Boise ASL
CONTACT'S POSITION  GIS Specialist
CONTACT'S ROLE  distributor

CONTACT INFORMATION
PHONE
VOICE  208-373-4356

ADDRESS
TYPE  both
DELIVERY POINT  322 East Front St; Suite 401
CITY  Boise
ADMINISTRATIVE AREA ID
POSTAL CODE  83702
E-MAIL ADDRESS  sparkes@fs.fed.us

METADATA MAINTENANCE
UPDATE FREQUENCY  not planned