Valley Confinement Algorithm General Metadata
Shapefile

Summary
This shapefile was generated using the Valley Confinement Algorithm (VCA) and represents unconfined valley bottoms for U.S. Forest Service lands in the Interior Columbia Basin (Region 17 of the Watershed Boundary Dataset), or the northwestern portion of Missouri Region 10. The VCA and resultant data are fully described in the Forest Service publication, RMRS-GTR-321: http://www.treesearch.fs.fed.us/pubs/45825

More information - http://www.fs.fed.us/rm/boise/AWAE/projects/valley_confinement.shtml

Description
The VCA used USGS 30 m DEM data and NHDPlusV2 flowline data to model unconfined valley bottoms at a scale of approximately 1:50,000 to 1:100,000. The algorithm used a valley "flooding" technique to identify flat valley bottoms greater than approximately 60-90 m in width. The valley was conceptually flooded to a height of five times the modeled bank full depth. The concurrence of the flooded region and a minimum ground slope threshold represents the unconfined valley bottom. Valley bottoms are represented by polygons in the shapefile.

Users should be aware of limitations imposed by the resolution (cell size) of the DEM. In particular, the algorithm identified wide streams greater than about 60 m as unconfined valleys, even though the true field condition may be confined. These polygons have been flagged in the shapefile using the Error_Flag attribute. A value of 1 in this field indicates the presence of a wide river that may be misidentified as an unconfined valley bottom. In addition, the VCA has difficulty resolving unconfined valleys that are narrower than about 60-90 m in width. These flat valley bottoms may not be identified in the shapefile.

The following parameters were used in the VCA program:

- Valley form: Valley bottom only
- Maximum ground slope threshold (%): 9
- Flood factor: 5
- Average annual precipitation (cm): Median value for the 6-digit hydrologic code
- Maximum valley width (m): 1000
- Minimum drainage area: (sq. km): 0
- Minimum stream length per polygon (m): 100
- Minimum valley bottom area (sq. m): 10000

Credits
More information - http://www.fs.fed.us/rm/boise/AWAE/projects/valley_confinement.shtml

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.

Fields

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.

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.

FIELD ID ▶
* **ALIAS**   ID
* **DATA TYPE**   Double
* **WIDTH**   10
* **PRECISION**   10
* **SCALE**   0
FIELD DESCRIPTION
   A unique ID number for each polygon feature

DESCRIPTION SOURCE
   USFS RMRS Boise Aquatic Sciences Lab

FIELD SHAPE_AREA ▶
* **ALIAS**   SHAPE_AREA
* **DATA TYPE**   Double
* **WIDTH**   19
* **PRECISION**   0
* **SCALE**   0
* **FIELD DESCRIPTION**
   Area of feature in internal units squared.

* **DESCRIPTION SOURCE**
   Esri

* **DESCRIPTION OF VALUES**
   Positive real numbers that are automatically generated.

FIELD VB_CLASS ▶
* **ALIAS**   VB_CLASS

* **DATA TYPE**   Integer
* **WIDTH**   9
* **PRECISION**   9
* **SCALE**   0
FIELD DESCRIPTION
   Always equals 1

DESCRIPTION SOURCE
   USFS RMRS Boise Aquatic Sciences Lab

FIELD HUC_6 ▶
* **ALIAS**   HUC_6
* **DATA TYPE**   Integer
* **WIDTH**   8
* **PRECISION**   8
* **SCALE**   0
FIELD DESCRIPTION
   The 6 digit hydrologic unit code from the Watershed Boundary Dataset.

DESCRIPTION SOURCE
   USFS RMRS Boise Aquatic Sciences Lab

FIELD Error_Flag ▶
* **ALIAS**   Error_Flag
* **DATA TYPE**   Integer
* **WIDTH**   8
* **PRECISION**   8
* **SCALE**   0
FIELD DESCRIPTION
   Used to flag polygons where an error is likely because the algorithm incorrectly identified wide water bodies as an unconfined valley bottom. Value 1 in the field identifies potential errors.

DESCRIPTION SOURCE
   USFS RMRS Boise Aquatic Sciences Lab