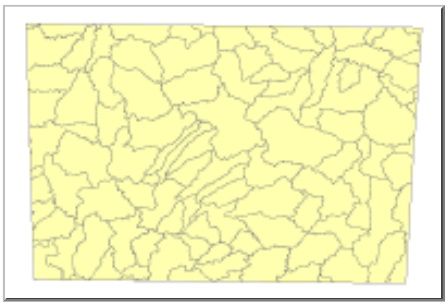
Watersheds (HUCs) of the Navajo Nation



Data format: Shapefile

File or table name: NN_HUC_250

Coordinate system: Geographic

Theme keywords: Hydrologic Unit, HUC, Watersheds

Abstract: This polygon shapefile, covering the Navajo Nation and surrounding area, maps the Hydrologic Units published by the U.S. Geological Survey Office of Water Data Coordination. It identifies the name and code of each region, subregion, accounting unit, and cataloging unit. The hydrologic units are encoded with an eight- digit number that indicates the hydrologic region (first two digits), hydrologic subregion (second two digits), accounting unit (third two digits), and cataloging unit (fourth two digits).

FGDC and ESRI Metadata:

Metadata elements shown with blue text are defined in the Federal Geographic Data Committee's (FGDC) *Content Standard for Digital Geospatial Metadata (CSDGM)*. Elements shown with green text are defined in the *ESRI Profile of the CSDGM*. Elements shown with a green asterisk (*) will be automatically updated by ArcCatalog. ArcCatalog adds hints indicating which FGDC elements are mandatory; these are shown with gray text.

Identification Information:

Citation:

Citation information:

Originators: Steeves, Peter and Douglas Nebert

Title:

Watersheds (HUCs) of the Navajo Nation

***File or table name:** NN_HUC_250

Publication date: 1994

***Geospatial data presentation form:** vector digital data

Publication information:

Publication place: Reston, Virginia
Publisher: U.S. Geological Survey

Online linkage: http://water.usgs.gov/lookup/getspatial?huc250k

Description:

Abstract:

This polygon shapefile, covering the Navajo Nation and surrounding area, maps the Hydrologic Units published by the U.S. Geological Survey Office of Water Data Coordination. It identifies the name and code of each region, subregion, accounting unit, and cataloging unit. The hydrologic units are encoded with an eight- digit number that indicates the hydrologic region (first two digits), hydrologic subregion (second two digits), accounting unit (third two digits), and cataloging unit (fourth two digits).

Purpose:

This data set was compiled originally to provide the National Water Quality Assessment (NAWQA) study units with an intermediate-scale river basin boundary for extracting other GIS data layers. The data can also be used for illustration purposes at intermediate or small scales (1:250,000 to 1:2 million).

Supplemental information:

The data produced by Geographic Information Retrieval and Analysis System (GIRAS) was originally collected at a scale of 1:250K. Some areas, notably major cities in the west, were recompiled at a scale of 1:100K. In order to join the data together and use the data in a geographic information system (GIS) the data were processed in the ARC/INFO GIS software package. Within the GIS, the data were edgematched and the neatline boundaries between maps were removed to create a single data set for the conterminous United States.

***Language of dataset:** en

Time period of content:

Time period information:

Single date/time:

Calendar date: 1994

Currentness reference:

REQUIRED: The basis on which the time period of content information is determined.

Status:

Progress: Complete
Maintenance and update frequency: None planned

Spatial domain:

Bounding coordinates:

***West bounding coordinate:** -113.518330
***East bounding coordinate:** -105.856180
***North bounding coordinate:** 38.371163
***South bounding coordinate:** 33.345145

Local bounding coordinates:

***Left bounding coordinate:** -113.518330
***Right bounding coordinate:** -105.856180
***Top bounding coordinate:** 38.371163
***Bottom bounding coordinate:** 33.345145

Keywords:

Theme:

Theme keywords: Hydrologic Unit, HUC, Watersheds
Theme keyword thesaurus: None

Place:

Place keywords: Navajo Nation, USA
Place keyword thesaurus: None

Access constraints: None
Use constraints:

This polygon dataset provides the watersheds (HUCs) for the Navajo Nation and surrounding area. These data were digitized at a scale of 1:250,000 with some portions of coverage at 1:100,000 and 1:2 million scale. Limitations of the data strictly revolve around this scale input. Use of these boundaries with larger scale data (i.e. 1:24k hydrography) is not recommended as it would be beyond the resolution capabilities of the data set.

Use of these data generally requires computer workstations with ESRI's Arc/Info (7.x or above), ArcGIS (8.x or above), or ArcView (3.x or 8.x), or some other GIS or CAD software that is capable of reading or converting this dataset.

The data are provided "as-is," without warranty of any kind, either express or implied.

These data have been compiled as part of a desktop project to collect existing spatial data to support the study of Navajo abandoned uranium mines. No field verifications were undertaken as part of this desktop study.

Point of contact:

Contact information:

Contact organization primary:

Contact organization: U. S. Environmental Protection Agency, Region 9, Superfund Program

Contact address:

Address type: mailing and physical address
Address:
75 Hawthorne St (SFD 8-2)
City: San Francisco
State or province: CA
Postal code: 94105
Country: USA

Contact voice telephone: 415-972-3167

Security information:

Security classification system: None

***Native dataset format:** Shapefile
***Native data set environment:**
Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.1.0.780

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Data Quality Information:

Attribute accuracy:

Attribute accuracy report:

Attribute accuracy is described, where present, with each attribute defined in the Entity and Attribute Section.

Logical consistency report:

Exported from a topologically clean Arc/Info coverage.

Completeness report:

This polygon dataset provides the watersheds (HUCs) for the Navajo Nation and surrounding area. These data were digitized at a scale of 1:250,000 with some portions of coverage at 1:100,000 and 1:2 million scale. Limitations of the data strictly revolve around this scale input. Use of these boundaries with larger scale data (i.e. 1:24k hydrography) is not recommended as it would be beyond the resolution capabilities of the data set.

Positional accuracy:

Horizontal positional accuracy:

Horizontal positional accuracy report:

Not available from source

Lineage:

Source information:

Source citation:

Citation information:

Title:

Hydrologic units maps of the Conterminous United States

Publication date: 1994
Geospatial data presentation form: vector digital data

Publication information:

Publication place: Reston, Virginia
Publisher: U.S. Geological Survey

Online linkage: http://water.usgs.gov/lookup/getspatial?huc250k

Source scale denominator: 250,000
Type of source media: online
Source citation abbreviation:

huc250

Source contribution:

Source of HUC dataset

Source time period of content:

Time period information:

Single date/time:

Calendar date: 1994

Source currentness reference:

publication date

Process step:

Process description:

The data was recieved as compressed giras tar files representing either a 1:250,000-scale (1:250K) quadrangle or a 1:100,000-scale (1:100K)

quadrangle. Each file was named after its respective quadrangle. A coverage of 1:250k quadrangles was used to divide the country up into four sections and get a list of names for each section. Using GIRASARC2, an aml designed to create an ARC/INFO data set (coverage) from a GIRAS file and a corresponding neat line coverage, it was quickly discovered that many of the quad names were to long for the program (i.e. sault_saint_marie) and a generic naming system for files and coverages was incorporated. In 1 of 10 cases, the name of the quadrangle did not correspond with the name of the file. These problems were traced down and corrected (after all four sections were converted there were many files left over...these wound up be all the 1:100k quads which did not have similar names to the 1:250k files).

After the files for a given section were all converted into ARC/INFO format, a loop aml was run which copied a coverage and its neatline cover into temporary storage (there was not enough room in info to deal with a large number of files in one directory), attached to that directory, built line topology, and went into the editor, ARCEDIT. In ARCEDIT, the outer edge (original neatline) was selected and deleted an the mathematically-calculated neatline coverage from the GIRASNEAT AML program was copied in using the ARCEDIT GET command. The original neatline was replaced with a calculated neatline because in all cases, the outline of the coverage quad never quite conformed to a "true" neatline causing overlaps and gapes between adjacent maps. The new neatline was connected to the internal arcs where they intersected. Lines which did not quite join the new neatline were extended to the edge with a maximum tolerance of 500 meters. All extensions were made within this tolerance. All arcs which extended beyond the new neatline were clipped off within a 500 meter tolerance as arguments to the CLEAN command into a separate directory. Both the neatline and huc coverages were deleted from the temporary space, and the program looped to the next coverage.

Another program was then run which added an item to the .aat called OUTER, went into INFO, and populated the attribute for all arcs composing the new neatline. This was done by reselecting for the identity of the polygon to the left or right of each arc whose value was "1", the identity of the outer "universe" polygon (reselect lpoly# = 1 or rpoly# = 1 in the .aat and calculated outer to = 1). All coverages were checked for additional dangles and then a MAPJOIN was run using NET as the feature option. Finally, most map edge lines were removed from the MAPJOINed coverage using the DISSOLVE to create a seamless basin coverage with polygons (basins) and arcs (boundaries) with attributes.

Quality control methods were applied to the resulting coverage by detecting and fixing node and label errors and remaining neat line arc problems (i.e. long neat lines still in the coverage). Many more problems arose in the western part of the country than in the east. Bordering HUC code disagreements between quads caused a number of cases in which neatlines did not dissolve. These were provisionally corrected for the most part, however there were several cases that required external review and editing to fix, and are now incorporated in the final data set. After all 1:250K sections were completed, the same procedure was run for the handful of 1:100k quads. These were mapjoined with the 1:250k quads to provide more detailed coverage where it was available.

Revisions:
Process_Step:
Process_Description:
Revision #1. See above for all the details
Process_Date: 10/92
Process_Step:
Process_Description:
Revision #2. Seattle and Bakersfield quadrangles were missing from the composite supplied by Pete Steeves. These were manually pasted in using Arcedit with small tolerances. Labelerrors were remedied and most dangles were removed using the Eliminate command.
Process_Date: 1/93
Process_Step:
Process_Description:
Revision #3. The following changes were made to a 1:250,000-scale version derived from National Mapping Divisions Geographic Information Retrieval and Analysis System (GIRAS) data.

The discrepancies in the hydrologic unit codes (HUCs) in California were changed because the California State Hydrologic Unit Map (HUM) was revised in 1978 but the 1:250,000-scale digital dataset was not. This has been reviewed by Bill Battaglin, Doug Nebert, and Paul Kapinos and is noted under Reviews (#6 below).

The areas in which the HUC labels were incorrect in California were 180701, 180702, 180703, 180600, 180300, and 180400. Boundaries were added in 180702 and 180600 from the 1:2 million source. Along the Oregon/California border, a boundary was added in 180102. In Wyoming, a boundary was added in 100902 from the 1:2 million source. Labels were corrected in these HUCs to reflect state updates, and where necessary, to add new labels to the newly-drawn boundaries. Map edges were manually removed in Arkansas, California, and along the Oregon/California border.

After the changes were made and saved in Arcedit, the build and clean commands were executed, followed by labelerrors. Three polygons had duplicate labels and were corrected. The labels were centered in the polygons by the centroidlabels command. Verification of the coverage was done by the describe command.
Process_Date: 12/93.
Process_Step:
Process_Description:
Revision #4. The NAMES file was added to the data set and its attributes were defined in the ATT file of the documentaton. This table is a lookup table to correlate the 8-digit numbers with verbose names officially assigned to the basins.
Process_Date: 3/94.
Process_Step:
Process_Description:
Revision #5. The following corrections were made to the 1:250,000-scale coverage of Hydrologic Unit Codes (HUC250):

Valid HUC code, 7140103, added to HUC250.NAM. Bourbeuse, Missouri. HUC250.NAM was sorted on HUC.

HUC frequency >1, tiny polygons were deleted that were erroneous:

17010212 deleted small poly to NW of main poly
10130305 deleted small poly to S of main poly
10230005 deleted small poly to S of main poly
14020001 deleted small poly to N of main poly
15050201 deleted small poly to W of main poly
04080203 deleted small poly to N of main poly
03120001 deleted small poly to S of main poly

Invalid HUC codes, not in names file, were corrected:

18020023 HUC should be 18020111 (in N-central California)
18070010 HUC should be 18070303 (in so. California)
15010017 HUC should be 15010007, delete arc separating it (in nw Arizona)
1870201 HUC should be 18070201 (in so. California, missing an 0)
1870204 HUC should be 18070204 (in so. California, missing an 0)
18060012 HUC should be 18060011 (in so. California, improper polygon closure)

18060011 HUC label added after polygon closure of 18060011

HUC frequency >1, larger polys were checked and corrected:

18020126 western poly is 18020108 in HUC2M (CA)
18050005 southern poly is 18050006 in HUC2M (CA)
18060006 split into 2 polys, no apparent reason, delete arc splitting polys (CA)
04110001 and 04100001 together are 04100001 in HUC2M (MI) (MAPEDGE was deleted)
02080108 northwestern poly is 02080208 in HUC2M (VA)

The invalid HUC codes, and 7140103 were found by relating to the HUC250.NAM file, and identifying polygons with no match in the names file. The rest were found by looking at the 96 polygons which had HUC codes with frequencies >1 in the PAT. Most of these seemed to be correct, and were along the US-Canada boundary, or were islands along the coasts.

These errors were found in the HUC250 coverage published as OFR 94-0326.
Process_Date: 12/94 & 1/95

Reviews_Applied_to_Data:
Peer review, 10/18/93, Bill Battaglin, USGS-WRD, Lakewood, Co, memo to Doug Nebert:

"I have completed a review of the 1:250,000 scale hydrologic units coverage (HUC) and found the digital data and metadata to be of high quality. I have a few suggested improvements to the digital data and to the documentation. Below is a summary of the methods I used to check feature accuracy in the digital data base and the problems I found.

Digital Features:

The line work for the HUC coverage was checked against the line work from:

(1) the 1:2,000,000 HUC coverage by plotting both data sets out on one large graphic (about 1:3,000,000). No major discrepancies were found except in

coastal areas where the 1:2,000,000 scale coverage had more detail than the 1:250,000 scale coverage.

(2) line work from 1:24,000 scale digitized drainage basins in Colorado, Illinois, and New Jersey. The match was generally good with departures generally less than 2500 meters. The biggest departures were in Colorado and were as large as 4000 meters.

(3) line work from the 1:2,000,000 scale rivers coverage for the USA by plotting both data sets out on one large graphic (about 1:3,000,000). In general the nesting of streams in HUCs was good and HUC boundaries intersected steams at stream intersections. In some places (SE New Mexico, SE California and NW Utah), the streams coverage does not match the HUC coverage that well, but this could easily be because of the unusual nature of streams in these areas or because of inaccuracies in the streams coverage.

(4) line work from 1:100,000 scale streams from Colorado, Illinois, and Kansas. The nesting of streams in HUCs was very good. Stream arcs for the most part did not cross HUC arcs except at stream intersections. The error (distance from intersection to HUC line) between HUC lines and stream intersection was less than 500 meters at all intersections checked (about 25).

Problems with Line work:

(1) There was a very large number of very short arcs in the coverage (3211 Lt 1000 meters long and 1729 Lt. 100 meters long). Most of these arcs were internal (did not border on outside polygon) and coded as 250k edges(3) (almost 3000) but some were 250k (2) lines and one was a 2m dlg (4). Arcs with lengths of less than 100 meters (maybe even less than 1000 meters) are difficult to deal with when editing subsets of the coverage, and they also add to the overall size of the database. I know many of these lines were created in the process of edgematching the quads, but I think the information content of these very short arcs is less valuable than the hassle and overhead involved in keeping them in the coverage.

(2) The edit distance for the coverage was set to a very small value. This may have been required for earlier processing, however, it makes the finished coverage difficult to work with. I had to reset the edit distance to a larger value when I wanted to select arcs in ARCEDIT interactively. This, of course, will be one of the things users will want to do with the new HUC coverage.

Polygon labels/attributes:

(1) Label point accuracy was checked by making a point cover of polygon labels from the 1:2,000,000 HUC coverage and then doing an identify of those points in the 1:250,000 scale HUC polygon. This procedure looked for both new or missing polygons, and was also used to check attribute values. I also dissolved both coverages by accounting unit and compared the number and location of remaining polygons.

Problems with labels/attributes:

(1) I discovered a total of 649 places where the HUC codes from the label point of the 1:2,000,000 coverage did not match the HUC code for the

1:250,000 HUC polygon that it fell within. As you had indicated in the documentation, there were a lot of differences in California. The 2m HUC had lots of label points resulting from islands, bays, and estuaries that are not included in the 1:250,000 scale HUC coverages. In other places the polygons seemed to be the same but the HUC codes were different. For example HUC 18020111 in the 1:2,000,000 coverage is coded as HUC 18020023 in the 1:250,000 coverage. There were also many differences in the Great Lakes. It seems odd that the 1:2,000,000 coverage should have more detail with regard to coastal features than the 1:250,000 scale coverage has. There were also internal polygon label differences in Minnesota (7100001 in 250k, 70200001 in 2m), Colorado (10090204 in 250k, 10180007 in 2m), Illinois (mistake in the 2m HUC I think), and Louisiana (11140203 in 250k, 11140202 in 2m). Texas and Florida also have a few that look like they should be checked.

(2) The dissolved 1:2,000,000 coverage contained 350 accounting unit polygons while the dissolved 1:250,000 HUC coverage only contained 177. There were large differences in the way the Accounting unit polygons looked in the Great Lakes Region, and in parts of California, Wyoming, and Florida. Again, many of the differences result from the use of a cruder coastline in the 1:250,000 scale HUC coverage.

Coverage Documentation:

The coverage documentation was reviewed both editorially and for overall completeness. The documentation was editorially sound and did not need any corrections.

Problems with the Documentation:

(1) The redefined items in the pat file were not defined in the data dictionary portion of the documentation file.

(2) The complete reference to the source material for the data is not in the documentation file."

Response to Peer review by Bill Battaglin, 1/5/93, Doug Nebert,USGS-WRD Reston
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Data were reviewed for attribute accuracy against a 1:2million base through random audit of polygon features. Line attributes were verified by symbol-ization on the screen. Regions were shaded in to verify correct polygon values for HUC at the Hydrologic Region level. Documentation was updated. The short arcs along the quadrangle boundaries were kept in the data set due to the importance of maintaining as much original information as possible. Basin codes were updated and additional erroneous neatlines removed.

Peer review, 11/10/93, Doug Nebert, USGS-WRD, Reston, memo to Paul Kapinos:

"As you are aware, we have several digital versions of the hydrologic unit maps for the United States and I am in the process of verifying and publishi a 1:250,000-scale version derived from National Mapping Division Geographic Information Retrieval and Analysis System (GIRAS) data as part of their land

use mapping program of the 1970s and early 1980s.

In comparing the 1:250,000-scale data reviewers noticed differences in both basin definition and hydrologic unit codes in Southern California and in the San Joaquin valley. The 1974 state map, at 1:500,000-scale agrees with the 1:250,000-scale GIRAS data in boundaries and numbers, whereas the 1:2.5 mill "wall map" of the U.S. agrees with the 1:2,000,000 digital data set. Both p maps are authoritative sources of information, but apparently something chan between the two maps.

On a related note, it is worthwhile to mention that the 1:2.5 million-scale wall map for the western U.S. is being revised to include new Alaska hydrolo unit codes before reprinting. It would be wise to be sure that the boundari depicted there are also the authoritative ones.

I would appreciate your review and adjudication of the California hydrologic unit definitions in order for us to publish this digital data set. Please provide a written response (e-mail and paper copy) and marked-up maps as to which basins and boundaries are current."

Peer review, 11/29/93, Paul Kapinos, USGS-WRD, memo to Doug Nebert:

"The discrepancies in the hydrologic unit codes (and some boundaries) in the State of California are due to the fact that the California State Hydrologic Unit Map (HUM) was revised in 1978 but the 1:250,000-scale digital data set was not. The events that most likely occurred can be summarized as follows:

o The 1:500,000-scale HUMs were published by OWDC over a period of about four years between 1974 and 1978.

o The National Mapping Division (NMD) overlaid the hydrologic unit boundaries on their 1:250,000-scale land-use and land-cover map series after each State HUM was completed, and later digitized these boundaries and their respective codes.

o In 1978, the State of California asked OWDC to revise the hydrologic unit boundaries and codes in the central valley.

o The 1:500,000-scale California HUM was revised and reprinted but NMD was either not informed of the revisions or chose not to revise or redigitize their 1:250,000-scale overlays.

o Once all the HUMs were printed (including the 1978 revisions of California and South Dakota), the 1980 1:2.5 million-scale United States wall map was published using the up-to-date (1978) boundaries and codes.

Based on the above summary, I would recommend using the boundaries and codes from the 1:2.5 million-scale map and the 1:2,000,000 digital data set. Please be aware that other hydrologic unit boundaries and/or codes may have been revised when individual State HUMs were reprinted by OWDC. I doubt if there has been any attempt to update any of the digital data sets with these changes."

Response to Peer Review by Paul Kapinos, Doug Nebert 2/14/94:

The areas in question in California were updated to reflect the more current information as contained in the 1:2 million data set. Polygon hydrologic unit codes were updated in the Central Valley and in coastal Southern California. Where necessary, 1:2 million-scale linework was substituted to define the correct basin boundaries where no corresponding information was available at a different scale.

Related_Spatial_and_Tabular_Data_Sets:
Any data set which has hydrologic unit codes as part of their data may be able to use this data.

Other_References_Cited:

U.S. Geological Survey, 1990. Land Use and Land Cover Digital Data from 1:250,000- and 1:100,000-Scale Maps. Data Users Guide 4, 33 pp, Reston Virginia.

Process software and version: ESRI Arc/INFO
Process date: 10/92-11/93

Source produced citation abbreviation:
huc250

Process contact:
Contact information:
Contact organization primary:
Contact person: Steeves, Peter and Douglas Nebert
Contact organization: US Geological Survey

Contact address:
Address type: mailing and physical address
City: Reston
State or province: VA
Country: USA

Process step:
Process description:
Dowloaded the HUC250 dataset from USGS Water Resources. Using ArcMap 8.2 imported the E00 file, huc250.e00, to create:

"huc250"

In ArcToolbox 8.2 redefined the projection from:

PROJECTION ALBERS
UNITS METERS
SPHEROID CLARKE1866
XSHIFT 0
YSHIFT 0
PARAMETERS
29 30 00

45 30 00
-96 00 00
23 00 00
0.0
0.0

to:

PROJECTION ALBERS
UNITS meters
DATUM NAD27
PARAMETERS
29 30 00.0
45 30 00.0
-96 00 00.0
23 00 00.0
0
0

Added "huc250" to an ArcMap 8.2 session, set the dataframe to Geographic DD NAD83.

Exported the coverage using the Dataframes projection, Creating:

HUC_250_US_d83.shp

Added the field HUC_Name (C60). Joined the file huc_rdb.txt via the HUC field. Calc'ed the "basin" field to "HUC_Name"

Created the DBF Region.dbf with the Numbers 1-18 in a REGION Field and the text " 1", " 2", ..., "10", "11", ..., "18" in a RGN field. Added this DBF to ArcMAP and joined it to HUC_250_US_d83.shp via REGION in the shape file to REGIOn in the DBF. This makes it possible to join huc_rdb.txt via a numeric field "RGN" to "basin" in the TXT file. Added the field "RGN_Name" (C60), and Calc'ed "basin" to "Region_Name".

Clipped this shape file, using the CLIP Geoprocessing tool in ArcMap 8.2 with nn_clip.shp, creating:

nn_HUC_250.shp

Process software and version: ESRI ArcGIS 8.2
Process date: 2003

Source used citation abbreviation:
huc250

Process contact:
Contact information:
Contact organization primary:
Contact organization: TerraSpectra Geomatics

Contact address:
Address type: mailing and physical address
Address:
2700 E Sunsewt Rd, Ste A-10

City: Las Vegas
State or province: NV
Postal code: 89120
Country: USA

Contact voice telephone: 702-795-8254

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Spatial Data Organization Information:

*__Direct spatial reference method:__ Vector

Point and vector object information:
SDTS terms description:
*__Name:__ NN_HUC_250
*__SDTS point and vector object type:__ G-polygon
*__Point and vector object count:__ 115

ESRI terms description:
*__Name:__ NN_HUC_250
*__ESRI feature type:__ Simple
*__ESRI feature geometry:__ Polygon
*__ESRI topology:__ FALSE
*__ESRI feature count:__ 115
*__Spatial index:__ FALSE
*__Linear referencing:__ FALSE

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Spatial Reference Information:

Horizontal coordinate system definition:
Coordinate system name:
*__Geographic coordinate system name:__ GCS_North_American_1983

Geographic:
*__Latitude resolution:__ 0.000000
*__Longitude resolution:__ 0.000000
*__Geographic coordinate units:__ Decimal degrees

Geodetic model:
*__Horizontal datum name:__ North American Datum of 1983
*__Ellipsoid name:__ Geodetic Reference System 80
*__Semi-major axis:__ 6378137.000000
*__Denominator of flattening ratio:__ 298.257222

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Entity and Attribute Information:

Detailed description:

*__Name:__ NN_HUC_250

Entity type:

*__Entity type label:__ NN_HUC_250

*__Entity type type:__ Feature Class

*__Entity type count:__ 115

Entity type definition:

Watersheds of the Navajo Nation

Entity type definition source:

USGS, TerraSpectra Geomatics

Attribute:

*__Attribute label:__ FID

*__Attribute alias:__ FID

*__Attribute definition:__

Internal feature number.

*__Attribute definition source:__

ESRI

*__Attribute type:__ OID

*__Attribute width:__ 4

*__Attribute precision:__ 0

*__Attribute scale:__ 0

Attribute domain values:

*__Unrepresentable domain:__

Sequential unique whole numbers that are automatically generated.

Attribute:

*__Attribute label:__ Shape

*__Attribute alias:__ Shape

*__Attribute definition:__

Feature geometry.

*__Attribute definition source:__

ESRI

*__Attribute type:__ Geometry

*__Attribute width:__ 0

*__Attribute precision:__ 0

*__Attribute scale:__ 0

Attribute domain values:

*__Unrepresentable domain:__

Coordinates defining the features.

Attribute:

*__Attribute label:__ AREA

*__Attribute alias:__ AREA

*__Attribute type:__ Number

*__Attribute width:__ 13

*__Attribute number of decimals:__ 11

Attribute:

*__Attribute label:__ PERIMETER

*Attribute alias: PERIMETER

*Attribute type: Number
*Attribute width: 13
*Attribute number of decimals: 11

Attribute:
*Attribute label: HUC250_
*Attribute alias: HUC250_

*Attribute type: Number
*Attribute width: 9

Attribute:
*Attribute label: HUC250_ID
*Attribute alias: HUC250_ID

*Attribute type: Number
*Attribute width: 9

Attribute:
*Attribute label: HUC
*Attribute alias: HUC
Attribute definition:
Hydrologic Unit Code Number
Attribute definition source:
USGS

*Attribute type: Number
*Attribute width: 8

Attribute:
*Attribute label: REGION
*Attribute alias: REGION
Attribute definition:
First level of classification number

*Attribute type: String
*Attribute width: 2

Attribute:
*Attribute label: SUBREGION
*Attribute alias: SUBREGION
Attribute definition:
Second level of classification number

*Attribute type: String
*Attribute width: 2

Attribute:
*Attribute label: ACCTUNIT
*Attribute alias: ACCTUNIT
Attribute definition:
Third level of classification number

*Attribute type: String

*Attribute width: 2

Attribute:
*Attribute label: HYDROUNIT
*Attribute alias: HYDROUNIT
Attribute definition:
Fourth level of classification number

*Attribute type: String
*Attribute width: 2

Attribute:
*Attribute label: HUC_NAME
*Attribute alias: HUC_NAME
Attribute definition:
Hydrologic Unit Code Name

*Attribute type: String
*Attribute width: 60

Attribute:
*Attribute label: RGN_NAME
*Attribute alias: RGN_NAME
Attribute definition:
First level of classification or Region Name

*Attribute type: String
*Attribute width: 60

Attribute:
*Attribute label: MAJORBASIN
*Attribute alias: MAJORBASIN
Attribute definition:
Name of a a major river basin, sometimes equivalent to Region and sometimes smaller.

*Attribute type: String
*Attribute width: 30

Overview description:
Dataset overview:
This shapefile contains 115 polygons representing watersheds of the Navajo Nation and the surrounding area.

Entity and attribute overview:
The United States is divided and sub-divided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system.

The first level of classification divides the Nation into 21 major geographic areas, or regions. These geographic areas contain either the drainage area of a major river, such as the Missouri region, or the combined drainage areas of a series of rivers, such as the Texas-Gulf region, which includes a number of rivers draining into the Gulf of Mexico.

Eighteen of the regions occupy the land areaof the conterminous United States. Alaska is region 19, the Hawaii Islands constitute region 20, and Puerto Rico and other outlying Caribbean areas are region 21. [The regions are shown in figure 1.]

The second level of classification divides the 21 regions into 222 subregions. A subregion includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin(s), or a group of streams forming a coastal drainage area.

The third level of classification subdivides many of the subregions into accounting units. These 352 hydrologic accounting units nest within, or are equivalent to, the subregions.

The fourth level of classification is the cataloging unit, the smallest element in the hierarchy of hydrologic units. A cataloging unit is a geographic area representing part of all of a surface drainage basin, a combination of drainage basins, or a distinct hydrologic feature. These units subdivide the subregions and accounting units into smaller areas. There are 2150 Cataloging Units in the Nation. Cataloging Units sometimes are called "watersheds."

For definition of drainage basins, "HUC", stands for the Hydrologic Unit Code and includes the 8-digit cataloging unit as assigned to the basin polygon by the U.S. Geological Survey.

There are 8 thematic attributes, including: HUC, REGION, SUBREGION, ACCTUNIT, HYDROUNIT, HUC_NAME, RGN_NAME, and MAJORBASIN.

Entity and attribute detail citation:
USGS Water-Supply Paper 2294

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Distribution Information:

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Contact information:

Contact organization primary:

Contact organization: U. S. Environmental Protection Agency, Region 9, Superfund Records Center

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Address type: mailing address
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Standard order process:
Digital form:
Digital transfer information:
***Transfer size:** 1.973
***Dataset size:** 1.973

Custom order process:
Contact the US EPA for a custom order.
Technical prerequisites:
Use of this data generally requires computer workstations with ESRI's Arc/Info (7.x or above), ArcGIS (8.x or above), or ArcView (3.x or 8.x), or some other GIS or CAD software that is capable of reading or converting this dataset.

Available time period:
Time period information:
Single date/time:

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Metadata Reference Information:

***Metadata date:** 20070803

***Language of metadata:** en

Metadata contact:
Contact information:
Contact person primary:
Contact person: Andrew Bain
Contact organization: U. S. Environmental Protection Agency, Region 9, Superfund Program
Contact position: Project Manager

Contact address:
Address type: mailing and physical address
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***Metadata standard name:** FGDC Content Standards for Digital Geospatial Metadata
***Metadata standard version:** FGDC-STD-001-1998
***Metadata time convention:** local time

Metadata access constraints: None.
Metadata use constraints:
None.

Metadata security information:

Metadata security classification system: None

Metadata extensions:
*__Online linkage:__ http://www.esri.com/metadata/esriprof80.html
*__Profile name:__ ESRI Metadata Profile

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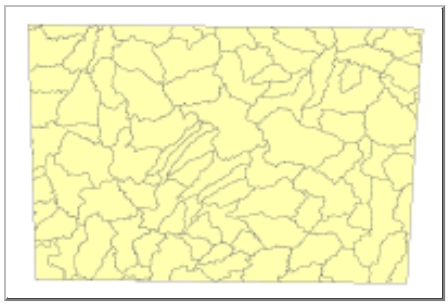
Binary Enclosures:

Thumbnail:
Enclosure type: Picture



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