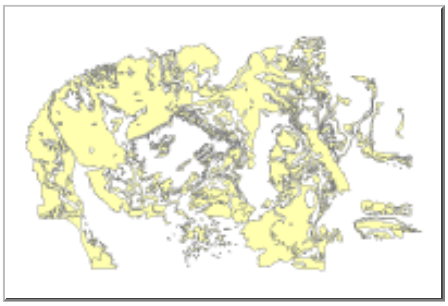
Navajo Nation Aquifers Receiving Recharge at the Surface



Data format: Shapefile

File or table name: NN_Aquifers

Coordinate system: Geographic

Theme keywords: Aquifers, Recharge Areas

Abstract: This polygon shapefile locates and identifies the aquifers of the Navajo Nation exposed at the surface and receiving recharge from Cooley et al., 1969.

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: Cooley, M.E., Harshbarger, J.W., Akers, J.P., and Hardt, W.F., 1969

Title:

Navajo Nation Aquifers Receiving Recharge at the Surface

***File or table name:** NN_Aquifers

Publication date: 1969

Geospatial data presentation form: document

Series information:

Series name: US Geological Survey Professional Paper

Issue identification: 521-A

Publication information:

Publication place: Reston, VA
Publisher: US Geological Survey

Other citation details:
Regional Hydrogeology of the Navajo and Hopi Indian Reservations, Arizona, New Mexico, and Utah. US Geological Survey Professional Paper 521-A. Plate 5. Map showing water-level contours,direction of water movement, and areas of recharge and discharge of aquifers in the Navajo and Hopi Indian Reservations, AZ, NM and UT.

***Online linkage:** \\Terra_dc\Navajo\NAUM_NN_Summary\DB\Water\NN_Aquifers.shp

Description:

Abstract:
This polygon shapefile locates and identifies the aquifers of the Navajo Nation exposed at the surface and receiving recharge from Cooley et al., 1969.

Purpose:
This dataset was developed to support the U.S. Environmental Protection Agency (USEPA) in its undertaking of an extensive scientific study to determine if abandoned uranium mines (AUM) and related mine features pose a significant risk to human health and the environment, and to identify areas requiring action to reduce risk for the Navajo Nation.

Supplemental information:
NN_Water_Level_and_Direction.shp is a companion line shapefile that provides water levels and ground water flow directions for selected aquifers.

***Language of dataset:** en

Time period of content:

Time period information:

Single date/time:

Calendar date: 1969

Currentness reference:
publication date

Status:

Progress: Complete
Maintenance and update frequency: None planned

Spatial domain:

Bounding coordinates:

***West bounding coordinate:** -111.868791
***East bounding coordinate:** -108.065334
***North bounding coordinate:** 37.376447
***South bounding coordinate:** 35.141606

Local bounding coordinates:

***Left bounding coordinate:** -111.868791
***Right bounding coordinate:** -108.065334
***Top bounding coordinate:** 37.376447
***Bottom bounding coordinate:** 35.141606

Keywords:

Theme:
Theme keywords: Aquifers, Recharge Areas
Theme keyword thesaurus: None

Place:
Place keywords: Navajo Nation, Arizona, Mew Mexico, Utah, United States
Place keyword thesaurus: None

Access constraints: None
Use constraints:
A polygon shapefile of recharged aquifers exposed at the surface for the area of the Navajo Nation.

Use of this data generally requires computer workstations with ESRI's Arc/Info (8.x or above), ArcGIS (8.x or above), or ArcView (3.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:
Attributes were checked against the source document: Plate 5, USGS Prof Paper 521-A.

Completeness report:
A polygon shapefile of recharged aquifers exposed at the surface for the area of the Navajo Nation.

Positional accuracy:
Horizontal positional accuracy:
Horizontal positional accuracy report:
Consistent with the scanned paper map at a scale of 1:500,000.

Lineage:
Source information:
Source scale denominator: 1:500,000
Type of source media: paper map
Source citation abbreviation:
Cooley Aquifers
Source contribution:
The sole source of information for this shapefile is the map from: Cooley, M.E., Harshbarger, J.W., Akers, J.P., and Hardt, W.F., 1969, Regional Hydrogeology of the Navajo and Hopi Indian Reservations, Arizona, New Mexico, and Utah. US Geological Survey Professional Paper 521-A. Plate 5. Map showing water-level contours,direction of water movement, and areas of recharge and discharge of aquifers in the Navajo and Hopi Indian Reservations, AZ, NM and UT.

Process step:
Process description:
Plate 5 from the Cooley Report was scanned and automated capturing the recharged aquifer polygons and attributing them based upon the map legend.

Process software and version: ESRI ArcGIS 9.1
Process date: July 2007

Source used citation abbreviation:
Cooley Aquifers

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

Contact address:
Address type: mailing and physical address
Address:
2700 E Sunset Rd, Ste A-10
City: Las Vegas
State or province: NV
Postal code: 89120
Country: USA

Contact voice telephone: 702-795-8254

Process step:
Process description:
Dataset copied.

Source used citation abbreviation:

V:\NAUM2\RV\DB\Utility\TSG_metadata_template

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Spatial Data Organization Information:

*Direct spatial reference method: Vector

Point and vector object information:
SDTS terms description:
*Name: NN_Aquifers
*SDTS point and vector object type: G-polygon
*Point and vector object count: 292

ESRI terms description:
*Name: NN_Aquifers
*ESRI feature type: Simple
*ESRI feature geometry: Polygon
*ESRI topology: FALSE
*ESRI feature count: 292
*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_Aquifers

Entity type:
*Entity type label: NN_Aquifers

*Entity type type: Feature Class
*Entity type count: 292

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: 19
*Attribute number of decimals: 11

Attribute:
*Attribute label: ID
*Attribute alias: ID

*Attribute type: Number
*Attribute width: 4

Attribute:
*Attribute label: Rchrge_ID
*Attribute alias: Rchrge_ID

*__Attribute type:__ Number
*__Attribute width:__ 4

__Attribute:__
*__Attribute label:__ Rchrg_Unit
*__Attribute alias:__ Rchrg_Unit

*__Attribute type:__ String
*__Attribute width:__ 15

__Attribute:__
*__Attribute label:__ Dscription
*__Attribute alias:__ Dscription

*__Attribute type:__ String
*__Attribute width:__ 250

__Overview description:__

__Dataset overview:__

There are 292 polygons.

__Entity and attribute overview:__

There are four thematic attributes

Area - Area in square meters
Rchrge_ID - Unique ID number for Aquifer Recharge Unit
Rchrg_Unit - Aquifer Recharge Unit Abbreviation
Dscription - Full description of Aquifer Recharge Unit

See below for correlation:

Rchrge_ID	Rchrg_Unit	Dscription
1	Volcanic	Volcanic rocks
2	Chuska	Chuska Sandstone and upper member of the Bidahochi Formation
3	Sandstone	Ojo Alamo Sandstone, Pictured Cliffs Sandstone, and Cliff House Sandstone
4	Mesaverde	Mesaverde Group
5	D-Aquifer	Rocks of the D multiple-aquifer system
6	Morrison	Salt Wash and Westwater Canyon Mmbrs of the Morrison Fm, Summerville Fm, and Bluff Ss in the NE part of the reservation, Salt Wash Mmbr of the Morrison Fm, Summerville Fm, Bluff Ss, and Entrada Ss in the NW and central parts of the reservation.
7	N-Aquifer	Rocks of the N multiple-aquifer system
8	Chinle	Shinarump Mmbr (Chinle Fm), Moenkopi Fm & DeChelly Ss Mmbr (Cutler Fm) - Monument Val.; Sonsela Ss Bed of Petrified Forest Mmbr (Chinle) & Shinarump, Moenkopi & DeChelly - Defiance Plateau; Shinarump & Sonsela in Zuni Mtns; Shinarump - W part res.
9	Kaibab	Kaibab Limestone, Toroweap Formation, and Coconino Sandstone
10	Cedar Mesa	Cedar Mesa Sandstone Member of the Cutler Formation

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Distribution Information:

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

Contact address:
Address type: mailing address
Address:
95 Hawthorne St (SFD-7C)
City: San Francisco
State or province: CA
Postal code: 94105
Country: USA

Contact voice telephone: 415-536-2033

Resource description: Downloadable Data

Distribution liability:
Although these data have been processed successfully on a computer system for the USEPA, no warranty expressed or implied is made by the USEPA or its contractors regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by USEPA or its contractors in the use of these data.

Standard order process:
Digital form:
Digital transfer information:
***Transfer size:** 0.805
***Dataset size:** 0.805

Custom order process:
Contact the USEPA for a custom order.
Technical prerequisites:
Use of this data generally requires computer workstations with ESRI's Arc/Info (8.x or above), ArcGIS (8.x or above), or ArcView (3.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:** 20070807

***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
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

***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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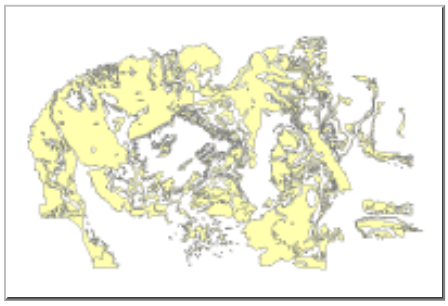
Binary Enclosures:

Thumbnail:
Enclosure type: Picture



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