

Need of Georeferencing Concepts and Expected Improvement

Georeferencing

- Georeference à the act of assigning locations to information
- It is essential in spatial databasing (GIS), since all information must be linked to the Earth's surface
- The method of georeferencing must be:
 - *Unique*, linking information to exactly one location
 - *Shared*, so different users understand the meaning of a georeference
 - *Persistent through time*, so today's georeferences are still meaningful tomorrow

Georeferences as Measurements

- Some Georeferences are metric
 - They define location using measures of distance from fixed places
 - E.g. distance from the Equator or from the Greenwich Meridian
- Others are based on ordering
 - E.g. street addresses in most parts of the world order houses along streets
- Others are only nominal
 - Placenames do not involve ordering or measuring

Georeferencing systems

- Place names
- Postal addresses and postal codes
- Linear referencing systems
- Cadasters
- Latitude and longitude
- Projections and coordinate systems
- The Global Positioning System

Latitude and Longitude

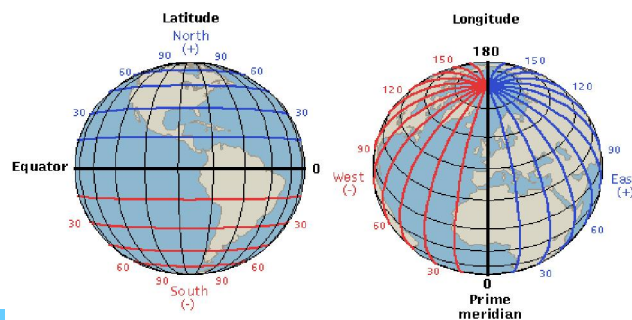
- The most comprehensive and powerful method of georeferencing
 - Provides potential for very fine spatial resolution
 - Allows distance to be computed between pairs of locations
 - Supports other forms of spatial analysis

- Uses a well-defined and fixed reference frame
 - Based on the Earth's rotation and center of mass, and the Greenwich Meridian

Latitude and Longitude

Latitude: is the angular distance, in degrees, minutes, and seconds of a point north or south of the Equator. Lines of latitude are often referred to as parallels.

Longitude: is the angular distance, in degrees, minutes, and seconds, of a point east or west of the Prime (*Greenwich*) Meridian. Lines of longitude are often referred to as meridians.

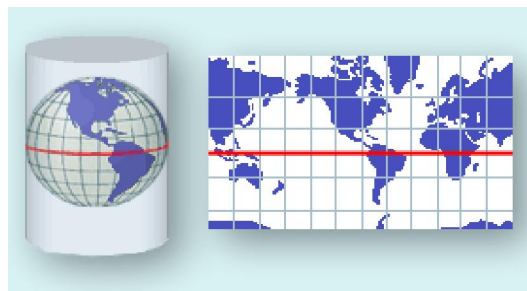


Projections and Coordinates

- There are many reasons for wanting to project the Earth's surface onto a plane, rather than deal with the curved surface
 - The paper used to output GIS maps is flat
 - Flat maps are scanned and digitized to create GIS databases
 - Square and rectangular rasters are flat
 - The Earth has to be projected to see all of it at once
 - It's much easier to measure distance on a plane

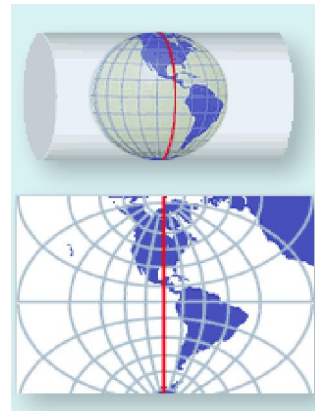
Cylindrical Projections

- The Mercator projection is the best-known cylindrical projection
 - The cylinder is wrapped around the Equator
 - The projection is conformal
 - At any point scale is the same in both directions
 - Shape of small features is preserved
 - Features in high latitudes are significantly enlarged

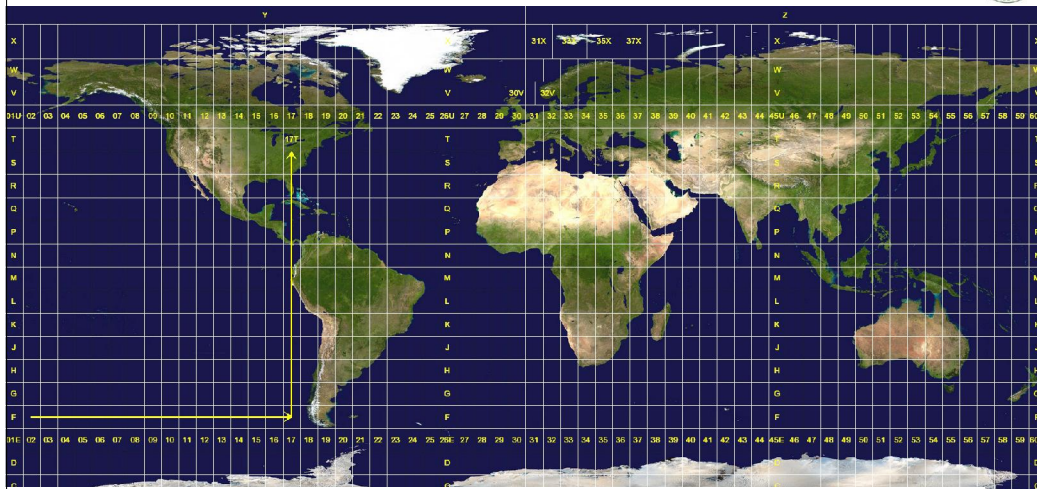


The Universal Transverse Mercator (UTM) Projection

- A type of cylindrical projection
- Implemented as an internationally standard coordinate system
 - Initially devised as a military standard
 - Uses a system of 60 zones
 - Maximum distortion is 0.04%
- *Transverse* Mercator because the cylinder is wrapped around the Poles, not the Equator



Universal Transverse Mercator (UTM)



Longitude zones are 6 degrees wide. They are numbered from 01 at 180° west, increasing towards the east until 60 at 180° east. Latitude zones are 8° high. They are lettered from C to X, omitting the letters "I" and "O", beginning at 80° south. The letters A, B, Y and Z are used in the polar regions by the Universal Polar Stereographic grid system.

The Global Positioning System (GPS)

- Allows direct, accurate measurement of latitude and longitude
- Accuracy of few meters from a simple, cheap unit
 - Differential GPS capable of sub-meter accuracy
 - Sub-centimeter accuracy if observations are averaged over long periods

Sources of Disaster Related Data

- EM-DAT
- ADRC
- Desinventar
- PreventionWeb
- Datamouth Flood Observatory
- USGS Earthquake
- NOAA Cyclone Track
- Pacific Rim Coordination Center

ADRC

Asian Disaster Reduction Center (ADRC)

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ADRC Top

About ADRC

Activities

Disaster Information

DRR Information of Member Countries

Events

Publications & Newsletter

[TOP PAGE](#) >> Disaster Information

Disaster Information

■ [Go to Disaster Information Archive](#)

■ [Reports on Large Scale Disasters](#)

■ [Disasters](#)

Disaster Information Search

When natural disasters occur, such as floods, droughts and earthquakes, the Center releases information on the phenomena that trigger the disasters and the damages. Related links are also available.

[Main Contents]

- Disaster name
- Country/ District
- Date/Period
- Headline
- GLIDE Number
- Related Links (Report/Articles/Map)

The Latest Disaster Information

- [China : Typhoon, Flood : 2013/08/15](#)
- [Philippines : Typhoon : 2013/08/12](#)
- [Japan : Flood, Landslide : 2013/08/09](#)
- [Sudan : Heavy Rain, Flood : 2013/08/01](#)
- [Pakistan : Flood : 2013/08/01](#)
- [Afghanistan : Flash Flood : 2013/08/03](#)
- [Myanmar : Flood : 2013/07/29](#)
- [Japan : Heavy Rain, Flood : 2013/07/28](#)
- [Korea, Democratic People's Republic Of : Heavy Rain, Flood : 2013/07/17](#)
- [Thailand : Flood : 2013/07/18](#)

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Select Continent:

- Any
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- Asia
- Europe
- Oceania

Select Country:

- Guinea
- Guinea Bissau
- Guyana
- Haiti
- Honduras
- Hong Kong (China)
- Hungary
- Iceland
- India

Select Event:

- DR - Drought
- EQ - Earthquake
- EP - Epidemic
- EC - Extratropical Cyclone
- ET - Extreme temperature/use of
- FA - Famine/use other "hazard"
- FR - Fire
- FF - Flash Flood
- FL - Flood

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Use Ctrl-Click and/or Shift-Click for multiple selections. If NO selections are made, ALL items will be selected

Type keywords: Looking for: All Words

Search between these dates: From: To:

Hits per page: 10 Sorted by: GLIDE

Search Results: 54 hits, 6 Pages: 1 2 3 4 5 6

GLIDE Number	Event	Country	Comment
FL-2013-00070-IND	Flood	India	At least 32 people have been killed and 31,822 have been affected by floods in India. The worst affected states are Assam, Kerala, Orissa and West Bengal.
FL-2012-000110-IND	Flood	India	At least 27 people have died and 900,000 others have been forced to leave their homes as monsoon rains have swamped wide areas of the northeastern Indian state of Assam since 23 Jun 2012. The government has deployed 15 teams of National Disaster Response Force (NDRF) personnel, who are carrying out rescue and relief operations.
FL-2011-000139-IND	Flood	India	This year, India has witnessed severe floods in six states, affecting more than 11 million people across India. The Indian Red Cross Society (IRCS) launched a domestic appeal to seek support of the domestic donors for the flood affected states. However, response to the appeal has so far been limited. More recently 2.2 million people have also been affected by floods in the Orissa (formerly known as Orissa) state, which was originally not under the domestic appeal, but will now be included. As the IRCS capacities are already stressed to cope with the situation, DREF has been requested to allow Indian Red Cross to support 75,000 beneficiaries in Orissa through distribution of non food relief items and safe drinking water. Where required, volunteers will carry out

Latest Events:

Disasters on week 33 or after From 2013/8/11 To 2013/8/20

EP-2013-000996-UGA
Epidemic/Uganda: The Ministry of Health has confirmed an outbreak of Measles in Kamwenge, Kyenjojo, Mubende and Isingiro districts one year after a countrywide mass measles immunization campaign was undertaken targeting children below 5 years of age in May 2012. This was after the results of blood samples taken from patients in these districts tested positive for the measles virus after laboratory scrutiny at Uganda Virus Research Institute (UVRI). This outbreak jeopardizes the measles elimination targets for the country hence the need to respond urgently by improving the immunization coverage levels in these districts. A rapid assessment done by the district and URCS reveals that the disease has affected the sub-counties of Kitanga, Kiganda, Kibalinge, Bageza, & Kiyuni in

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EM-DAT

The International Disaster Database

CRED – University of Louvain, Belgium



预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/云报告?reportId=5_6857

