

Table 4.2: Some of the projections available in ILWIS. See for other projections and descriptions also the ILWIS Help topics Select projection and Suggested projections.

Projection	Remarks
Cylindrical	
Cassini	Map is equidistant. Used in ellipsoidal form for topographic mapping of Great Britain before the 1920's (supposedly Airy ellipsoid) and detailed mapping of German states in the same period; also used for topographic mapping of France in the 18th century.
Central Cylindrical	Map is perspective but neither conformal nor equal area. Projected perspective from the center of the earth onto a cylinder tangent to the equator. Only used for teaching purposes.
Eckert I	Pseudo-cylindrical projection. Map has equally spaced parallels and is neither conformal nor equal area. Used for showing straight line equal-area graticule.
Eckert II	Pseudo-cylindrical projection. Map is equal area. Meridians are equally spaced straight lines broken at the Equator. Used for showing straight line equal-area graticule.
Eckert III	Pseudo-cylindrical projection. Map has equally spaced parallels and is neither conformal nor equal area. Used for showing straight line equal-area graticule.
Lambert Cylind Equal Area	Also called Cylindrical Equal Area. Mainly used for educational purposes.
Mercator	Conformal. Designed for navigational use; standard for marine charts. Recommended use for conformal mapping of regions predominantly bordering the equator. Often inappropriately used as a world map.
Miller	Compromise between Mercator and other cylindrical projections. Used in numerous world maps.
Mollweide	Pseudo-cylindrical projection. Map is equal area. Occasionally used in thematic world maps.
Oblique Mercator	Map is conformal. Oblique aspect of Mercator. Used for larger scale mapping in Switzerland, Madagascar and Borneo, and for atlas maps of regions having a greater extent in an oblique direction, such as Hawaii.
Plate Carree	Also called Simple Cylindrical or Equidistant cylindrical. Used for raster maps which store information of the whole world: Each pixel represents a square block of LatLon coordinates, i.e. information is stored per degree, per minute, etc. Used for mapping the earth taken as a sphere.
Plate Rectangle	Also called EquiRectangular. Variant of Plate Carree. Used for raster maps which store information of the whole world: Each pixel represents a rectangular block of LatLon coordinates.
Robinson	Pseudo-cylindrical projection for world maps compromising distortion. Map is neither conformal nor equal area. Used for world maps, for example, by Rand McNally in Goode's Atlas for thematic world maps. Only used in spherical form.
Transverse Mercator	Also called Gauss Conformal, or Gauss Krüger. Transverse form of the Mercator Projection (conformal). Used for many topographic maps at scales from 1: 20000 to 1: 250000. Recommended for mapping regions that are predominantly north-south in extent.
UTM	Universal Transverse Mercator. Map is conformal. Widely used for topographic maps and military maps.
Azimuthal	
Azimuthal Equidistant	Commonly used in the polar aspect for maps of polar regions and the Northern and Southern hemispheres. The oblique aspect is frequently used for world maps centered on important cities and occasionally for maps of continents.
Gnomonic	Map is perspective and neither conformal nor equal area. It is used to show great circle paths as straight lines and thus to assist navigators and aviators.
Hammer Aitoff	Hammer Aitoff Equal Area, variant of Lambert Azimuthal Equal Area.
Lambert Azimuthal Equal Area	Used for maps of continents and hemispheres. Also suited for regions extending equally in all directions from a center point, such as Asia and the Pacific Ocean.
Orthographic	Known by Egyptians and Greeks 2000 years ago. Map is perspective and neither conformal nor equal area. Only one hemisphere can be shown. The earth appears as it would on a photograph from space.

Table 4.2 continued:

Projection	Remarks
Stereographic	Apparently invented by Hipparchus (2nd century bc). Used in combination with UTM projection as Universal Polar Stereographic (UPS) for mapping poles and in navigation charts for latitudes above 80°. Recommended for conformal mapping of regions that are approximately circular in shape. For example, used for topographic maps of the Netherlands.
UPS	Universal Polar Stereographic. Azimuthal and perspective projection. Map is conformal. Used in combination with UTM projection as Universal Polar Stereographic (UPS) in Arctic and Antarctic maps and in navigation charts for latitudes above 80°.
Conical	
Albers Equal Area Conic	If the pole is one of the standard parallels, it is equal to Lambert's Equal Area Conic. Frequently used for maps of the United States, for thematic maps and for world atlases. Recommended for equal area maps of regions that are mainly east-west in extent.
Bonne	Pseudo-conic projection. Map is equal area. Frequently used until mid-20th century for atlas maps of continents and for topographic mapping of some countries.
Equidistant Conic	Also called Simple Conic. The most common projection in atlases for small countries.
Lambert Conformal Conic	Lambert Conformal Conic/Conical Orthomorphic (Lambert, 1972) (conformal). Extensively used for large-scale mapping of regions predominantly east-west in extent. Further widely used for topographic maps.
Polyconic	or American Polyconic (Hassler, ± 1820). Map is neither conformal nor equal area. The sole projection used for large scale mapping of the United States by the USGS until the 1950's.
Other projections	
Dutch RD	Dutch topographic map projection. Map is conformal. The stereographic projection of the Netherlands is a so-called double projection. The datum Rijksdriehoeksmeting, which implies the Bessel 1841 ellipsoid, will be used automatically.
Gauss-Boaga (Italy)	Country projection. Transverse Mercator used in topographic maps of Italy.
Gauss (Colombia)	Country projection. Transverse Mercator used in topographic maps of Colombia.
Gauss-Krüger (Germany)	Country projection. Transverse Mercator used in topographic maps of Germany.
General Perspective	Shows the earth as seen from space. Projection is perspective.
Lambert Conformal Conic (France)	Country projection. Lambert conformal conic projection used in topographic maps of France.
Sinusoidal	used since 16th century. Also called Mercator Equal Area. Pseudo-cylindrical projection. Map is equal area. Used in atlas maps of South America and Africa. Occasionally used for world maps. Modifications are called Sinusoidal Interrupted, Sinusoidal 2x Interrupted and Sinusoidal 3x Interrupted.
Van der Grinten	Shows the entire earth within one circle. All areas, shapes and angles are greatly distorted.

You will see that the world is projected in a circular way on a plane which touches the earth at 0 degrees latitude and longitude. Therefore, the equator and the 0 degrees meridian are straight lines.



- Open coordinate system: Lambert_AEA.
- Enter for the Central Meridian: 60° 00' 00" W and for the Central Parallel: 20° 00' 00" N and click OK.
- Press the Redraw button in the map window.