

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS	
<i>Name</i>	<b>NAD 83 (1986) - LatLon</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	270	
<i>Alias</i>	NAD83 (1986)	
<i>Alias</i>	NAD83(Original)	
<i>Information source</i>	<i>Title</i>	Project REDEAM: Models for Historical Horizontal Deformation
	<i>Author</i>	R.A. Snay, M.W. Cline, E.L. Timmerman
	<i>Publisher</i>	U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Charting and Geodetic Services, Rockville, MD
	<i>Publication date</i>	1987-09
	<i>Series/Journal name</i>	NOAA Technical Report
	<i>Issue identification</i>	NOS 125 NGS 42
	<i>Title</i>	NADCON 5.0: Geometric Transformation Tool for points in the National Spatial Reference System
<i>Information source</i>	<i>Author</i>	D. Smith, A. Bilich
	<i>Publisher</i>	NOAA's National Geodetic Survey
	<i>Publication date</i>	2017-03-27
	<i>Edition date</i>	2017-03-27
	<i>Series/Journal name</i>	NGS Technical Report
	<i>Other citation details</i>	Replaces version 4.2 and all earlier. Provides gridding algorithm, datum transformations, and extents of covnversion grids.
	<i>Title</i>	The Evolution of NAD83 in Canada
<i>Information source</i>	<i>Author</i>	M. Craymer
	<i>Publisher</i>	Canadian Institute of Geomatics
	<i>Publication date</i>	2006
	<i>Series/Journal name</i>	Geomatica
	<i>Issue identification</i>	Volume 60, No. 2
	<i>Page</i>	151-164
	<i>Title</i>	Evolution of NAD 83 in the United States: Journey from 2D toward 4D
<i>Information source</i>	<i>Author</i>	R.A. Snay
	<i>Publisher</i>	American Society of Civil Engineers
	<i>Publication date</i>	2012-11
	<i>Series/Journal name</i>	Journal of Surveying Engineering
	<i>Issue identification</i>	Volume 138, No. 4
	<i>Page</i>	161-171
	<i>Title</i>	North American Datum of 1983
<i>Information source</i>	<i>Author</i>	C.R. Schwarz (ed)
	<i>Publisher</i>	U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Charting and Geodetic Services, Rockville, MD
	<i>Publication date</i>	1989-12
	<i>Series/Journal name</i>	NOAA Professional Paper
	<i>Issue identification</i>	NOS 2
	<i>Title</i>	Notice to Adopt Standard Method for Horizontal Datum Transformation
	<i>Author</i>	US Government
<i>Information source</i>	<i>Publisher</i>	Office of Federal Register, NARA
	<i>Publication date</i>	1990-08-10
	<i>Edition date</i>	1990-08-10

<i>Information source</i>	<i>Series/Journal name</i>	Federal Register Notice
	<i>Issue identification</i>	Volume 55, No. 155, Document: 00-18809
	<i>Page</i>	32681.0
	<i>Other citation details</i>	Mandates use of NADCON for official transformations between datums
<i>Information source</i>	<i>Title</i>	The Canadian Spatial Reference System (CSRS)
	<i>Author</i>	Canadian Geodetic Survey
	<i>Publisher</i>	Canadian Geodetic Survey, Surveyor General Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada
	<i>Publication date</i>	2016-08-30
<i>Information source</i>	<i>Title</i>	The NAD 83 Project - Status and Background
	<i>Author</i>	J.D. Boal, J.P. Henderson
	<i>Publisher</i>	Canadian Institute of Geomatics
	<i>Publication date</i>	1988
<i>Data source</i>	<i>Series/Journal name</i>	Papers for the CISM Seminars on the NAD '83 Redefinition in Canada and the Impact on Users
		ISO Geodetic Registry
<i>Remarks</i>	This CRS includes longitudes which are POSITIVE EAST. The adjustment included connections to Greenland and Mexico but the system has not been adopted there. Except in Alaska, for applications with an accuracy of better than 1m replaced by NAD83(HARN).	
<i>Scope</i>	Spatial referencing	
<i>Datum</i>	North American Datum of 1983	
<i>Coordinate System</i>	Ellipsoidal 2D CS. Axes: latitude, longitude. Orientations: north, east. UoM: degree	

## Extent

<i>Description</i>	<b>North America - onshore and offshore: Canada - Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, Yukon. Puerto Rico. United States (USA) – Alaska, CONUS (Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming), Hawaii. Virgin Islands (British). Virgin Islands (US).</b>	
<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>	167.65
	<i>North-bound latitude</i>	86.46
	<i>East-bound longitude</i>	-47.74

*South-bound latitude*

14.92

# ISO Geodetic Registry

<i>Item class</i>	GeodeticDatum	
<i>Name</i>	<b>North American Datum of 1983</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	161	
<i>Alias</i>	NAD83(Original)	
<i>Alias</i>	NAD83	
<i>Alias</i>	NAD83(1986)	
<i>Alias</i>	NAD 83 (1986)	
<i>Information source</i>	<i>Title</i>	NADCON 5.0: Geometric Transformation Tool for points in the National Spatial Reference System
	<i>Author</i>	D. Smith, A. Bilich
	<i>Publisher</i>	NOAA's National Geodetic Survey
	<i>Publication date</i>	2017-03-27
	<i>Edition date</i>	2017-03-27
	<i>Series/Journal name</i>	NGS Technical Report
	<i>Other citation details</i>	Replaces version 4.2 and all earlier. Provides gridding algorithm, datum transformations, and extents of covnversion grids.
<i>Information source</i>	<i>Title</i>	North American Datum of 1983
	<i>Author</i>	C.R. Schwarz (ed)
	<i>Publisher</i>	U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Charting and Geodetic Services, Rockville, MD
<i>Information source</i>	<i>Publication date</i>	1989-12
	<i>Series/Journal name</i>	NOAA Professional Paper
	<i>Issue identification</i>	NOS 2
<i>Information source</i>	<i>Title</i>	The Evolution of NAD83 in Canada
	<i>Author</i>	M. Craymer
	<i>Publisher</i>	Canadian Institute of Geomatics
	<i>Publication date</i>	2006
<i>Information source</i>	<i>Series/Journal name</i>	Geomatica
	<i>Issue identification</i>	Volume 60, No. 2
	<i>Page</i>	151-164
<i>Information source</i>	<i>Title</i>	Evolution of NAD 83 in the United States: Journey from 2D toward 4D
	<i>Author</i>	R.A. Snay
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<i>Information source</i>	<i>Series/Journal name</i>	Journal of Surveying Engineering
	<i>Issue identification</i>	Volume 138, No. 4
	<i>Page</i>	161-171
<i>Information source</i>	<i>Title</i>	The NAD 83 Project - Status and Background
	<i>Author</i>	J.D. Boal, J.P. Henderson
	<i>Publisher</i>	Canadian Institute of Geomatics
	<i>Publication date</i>	1988
<i>Information source</i>	<i>Series/Journal name</i>	Papers for the CISM Seminars on the NAD '83 Redefinition in Canada and the Impact on Users
	<i>Title</i>	The Canadian Spatial Reference System (CSRS)
	<i>Author</i>	Canadian Geodetic Survey
	<i>Publisher</i>	Canadian Geodetic Survey, Surveyor General Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada
<i>Information source</i>	<i>Publication date</i>	2016-08-30
	<i>Title</i>	Notice to Adopt Standard Method for Horizontal Datum Transformation

	<i>Author</i> US Government <i>Publisher</i> Office of Federal Register, NARA <i>Publication date</i> 1990-08-10 <i>Edition date</i> 1990-08-10 <i>Series/Journal name</i> Federal Register Notice <i>Issue identification</i> Volume 55, No. 155, Document: 00-18809 <i>Page</i> 32681.0 <i>Other citation details</i> Mandates use of NADCON for official transformations between datums
Information source	<i>Title</i> The Evolution of NAD83 in Canada: Addendum <i>Author</i> M. Craymer <i>Publisher</i> Canadian Institute of Geomatics <i>Publication date</i> 2006 <i>Series/Journal name</i> Geomatica <i>Issue identification</i> Volume 60, No. 4 <i>Page</i> 433.0
Information source	<i>Title</i> Project REDEAM: Models for Historical Horizontal Deformation <i>Author</i> R.A. Snay, M.W. Cline, E.L. Timmerman <i>Publisher</i> U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Charting and Geodetic Services, Rockville, MD <i>Publication date</i> 1987-09 <i>Series/Journal name</i> NOAA Technical Report <i>Issue identification</i> NOS 125 NGS 42 ISO Geodetic Registry
Data source	
Remarks	The 1986 adjustment includes connections to Greenland and Mexico but the system has not been adopted there. A set of numerical horizontal crustal motion models for California, Nevada, parts of Alaska and Hawaii were used to estimate horizontal velocities in order to convert geodetic observations from their original epoch to 1984.0. For other parts of the network, no datum realization epoch exists (datum is a mix of observations from different eras). Replaced NAD27 in Canada and U.S. Replaced by NAD 83 (HARN) in US and NAD83(CSRS96) v1 in Canada.
Anchor definition	Original 1986 horizontal network adjustment. The origin, scale and orientation of the frame are nominally defined to be that for the BIH Terrestrial System 1984 (BTS84) with origin at the approximate geocentre. NAD83 Doppler stations in the Doppler reference frame NWL 9D were brought into alignment with BTS84 using an internationally adopted transformation.
Release date	1986
Scope	Spatial referencing
Ellipsoid	GRS 1980
Prime Meridian	Greenwich

## Extent

Description	<b>North America - onshore and offshore: Canada - Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, Yukon. Puerto Rico. United States (USA) – Alaska, CONUS (Alabama,</b>
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Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming), Hawaii. Virgin Islands (British). Virgin Islands (US).

*Geographic Bounding Box*

<i>West-bound longitude</i>	167.65
<i>North-bound latitude</i>	86.46
<i>East-bound longitude</i>	-47.74
<i>South-bound latitude</i>	14.92

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<i>Item class</i>	Ellipsoid														
<i>Name</i>	<b>GRS 1980</b>														
<i>Item status</i>	VALID														
<i>Identifier</i>	27														
<i>Alias</i>	Geodetic Reference System 1980														
<i>Alias</i>	GRS1980														
<i>Alias</i>	IAG GRS80														
<i>Alias</i>	International 1979														
<i>Alias</i>	GRS80														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>Springer International Publishing</td></tr> <tr> <td><i>Publication date</i></td><td>2003-03</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Journal of Geodesy</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 74, No. 1</td></tr> <tr> <td><i>Page</i></td><td>128–162</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	Springer International Publishing	<i>Publication date</i>	2003-03	<i>Series/Journal name</i>	Journal of Geodesy	<i>Issue identification</i>	Volume 74, No. 1	<i>Page</i>	128–162
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	Springer International Publishing														
<i>Publication date</i>	2003-03														
<i>Series/Journal name</i>	Journal of Geodesy														
<i>Issue identification</i>	Volume 74, No. 1														
<i>Page</i>	128–162														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>International Association of Geodesy</td></tr> <tr> <td><i>Publication date</i></td><td>1984</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Bulletin Geodesique</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 58, No. 3</td></tr> <tr> <td><i>Page</i></td><td>395-405</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	International Association of Geodesy	<i>Publication date</i>	1984	<i>Series/Journal name</i>	Bulletin Geodesique	<i>Issue identification</i>	Volume 58, No. 3	<i>Page</i>	395-405
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	International Association of Geodesy														
<i>Publication date</i>	1984														
<i>Series/Journal name</i>	Bulletin Geodesique														
<i>Issue identification</i>	Volume 58, No. 3														
<i>Page</i>	395-405														
<i>Data source</i>	ISO Geodetic Registry														
<i>Remarks</i>	Adopted by IUGG 1979 Canberra. Inverse flattening is derived from geocentric gravitational constant $GM = 3986005e8 \text{ m}^3/\text{s}^2$ , dynamic form factor $J_2 = 108263e-8$ and Earth's angular velocity = $7292115e-11 \text{ rad/s}$ .														
<i>Semi-major axis</i>	6378137.0 m														
<i>Inverse flattening</i>	298.257222101 m														

# ISO Geodetic Registry

<i>Item class</i>	PrimeMeridian	
<i>Name</i>	<b>Greenwich</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	25	
<i>Alias</i>	Zero meridian	
<i>Information source</i>	<i>Title</i>	Why the Greenwich meridian moved
	<i>Author</i>	S. Malys, J.H. Seago, N.K. Pavlis, P.K. Seidelmann, G.H. Kaplan
	<i>Publisher</i>	Springer International Publishing
	<i>Publication date</i>	2015-12
	<i>Series/Journal name</i>	Journal of Geodesy
	<i>Issue identification</i>	Volume 89, No. 12
	<i>Page</i>	1263–1272
<i>Information source</i>	<i>Title</i>	IERS Conventions (2010)
	<i>Author</i>	G. Petit, B.J. Luzum (eds)
	<i>Publisher</i>	Verlag des Bundesamts für Kartographie und Geodäsie
	<i>Publication date</i>	2010
	<i>Edition date</i>	
	<i>Series/Journal name</i>	IERS Technical Notes
	<i>Issue identification</i>	36.0
<i>Data source</i>	<i>Other citation details</i>	ISSN: 1019-4568
	ISO Geodetic Registry	
<i>Greenwich longitude</i>	0.0 °	



# ISO Geodetic Registry

<i>Item class</i>	EllipsoidalCS	
<i>Name</i>	<b>Ellipsoidal 2D CS. Axes: latitude, longitude. Orientations: north, east. UoM: degree</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	43	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used in geographic 2D coordinate reference systems. Coordinates referenced to this CS are in degrees. Any degree representation (e.g. DMSH, decimal, etc.) may be used but that used must be declared for the user by the supplier of data.	

## Axes

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geodetic latitude</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	38	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used in geographic 2D and geographic 3D coordinate reference systems.	
<i>Abbreviation</i>	Lat	
<i>Direction</i>	north	
<i>Unit</i>	degree (supplier to define representation)	

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geodetic longitude</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	34	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)

	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used in geographic 2D and geographic 3D coordinate reference systems.	
<i>Abbreviation</i>	Lon	
<i>Direction</i>	east	
<i>Unit</i>	degree (supplier to define representation)	