Country Profile: Norway

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Country Resources

Topographic

Series	Publisher	Scale	Years	Sheets
Norway 1:50,000 Scale Topographic Maps (N50)	Kartverket	1:50,000	2017	2,350

Nautical

Series	Publisher	Scale	Years	Sheets
EVMaritime Vector Data: Norway – Not for Navigation (EVMV)	EVG	Varies	2026	1,255
Norway Nautical Charts (All Scales)	Kartverket	Varies	2016 – 2026	235

Aeronautical

Series	Publisher	Scale	Years	Sheets
Sweden 1:500,000 Scale Aeronautical Charts	LFV	1:500,000	2018	7
Denmark 1:500,000 Scale Aeronautical Charts	NAVIAIR	1:500,000	2019	1
Norway 1:500,000 Scale Aeronautical Charts	AVINOR	1:500,000	2014 – 2019	3

Geoscientific

Series	Publisher	Scale	Years	Sheets
Norway 1:250,000 Scale Geological Maps	NGU	1:250,000	1970 – 2008	44

Thematic

Series	Publisher	Scale	Years	Sheets
The World 1:30,000,000 Scale Topographic Map Series 1145 (NGA)	DMA	1:30,000,000		2

Global Census Archive: GIS Census Data

East View Geospatial has an ongoing effort to add GIS census data to our Global Census Archive program. Please contact us for the status and availability of Norway census resources.

Global Geography Library

Collection Name	Item Count	Published	Index Map / Title List
Norway Nautical Charts (All Scales)	238	2007-2016	title list

Global Resources

Topographic

Series	Publisher	Scale	Years	Sheets

Soviet Military City Plans	VTU GSh	Varies	1944 – 2003	3,021
Soviet Military 1:100,000 Scale Topographic Maps	VTU GSh	1:100,000	1947 – 1999	24,897
Soviet Military 1:200,000 Scale Topographic Maps	VTU GSh	1:200,000	1949 – 2009	17,799
Soviet Military 1:500,000 Scale Topographic Maps	VTU GSh	1:500,000	1953 – 1998	3,093
Soviet Military 1:1,000,000 Scale Topographic Maps	VTU GSh	1:1,000,000	1948 – 1994	1,089

Nautical

Series	Publisher	Scale	Years	Sheets
NGA Nautical Charts POD Certified (All Scales)	NGA	Varies	1943 – 2013	4,517

Aeronautical

Series	Publisher	Scale	Years	Sheets
Joint Operations Graphic (JOG 1501A) 1:250,000 – Aeronautical	DMA	1:250,000	1958 – 2007	6,380
Tactical Pilotage Chart (TPC) 1:500,000 Scale – Aeronautical	DMA	1:500,000	1967 – 2006	618
Operational Navigation Chart (ONC) 1:1,000,000 Scale – Aeronautical	DMA	1:1,000,000	1969 – 2001	248
Jet Navigation Chart (JNC) 1:2,000,000 Scale – Aeronautical	DMA	1:2,000,000	1971 – 1999	117
Global Navigation and Planning Chart (GNC) 1:5,000,000 Scale – Aeronautical	DMA	1:5,000,000	1981 – 1999	27

Note: East View Geospatial is continuously sourcing new resources that may not yet be listed in Global Explorer. Please contact us if you have geodata needs beyond what is listed above and we will be happy to discuss available off-the-shelf and custom solutions.

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Historical Country Mapping Information

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Topographic

The principal survey and mapping organization in Norway is **Statens kartverk (SKV)**, Hønefoss. Formerly known as **Norges Geografiske Oppmåling**, it was established under its present name in 1986 to be responsible for the country's land, sea and resource mapping. The original topographic survey was founded in 1773, but the first systematic mapping program did not commence until 1867 with the establishment of a national plan for mapping, which included the provision of a 1:100,000 scale series known as the *rektangelkart*, and drawn on a Cassini projection. Later, in northern Norway, the *gradteigskart* (graticule map) was introduced, also at 1:100,000 scale but on a Polyhedric projection (later transferred to the Gauss-Krüger). The four-color maps of these two series, drawn originally from plane table and aneroid surveys, eventually covered most of Norway and remained in production until 1966.

The 1:50,000 (Series M711) forms the basic scale modern map of Norway. Work on this series began in 1955, when sheets of northern Norway were compiled to NATO specifications with the aid of the American **Defense Mapping Agency**. The current map covers the whole of Norway in 727 sheets. The latest sheets are printed in seven colors, and there is a 20 m contour interval. The projection is UTM, and a 1 km UTM grid is printed on the face of the map in blue. The series now uses the EUREF89 (WGS84) datum. The legend is in Norwegian and English, and the map is available in flat or folded formats. It is kept up-to-date using aerial photogrammetric methods and fieldwork, and revision material is sometimes added to the sheets as a magenta overprint. Editions published since 1988 show cultivated land in yellow. Following the passing of a place name law in 1991, the maps are to become official records of the approved (standardized) names. The more recent sheets are printed with an integral cover and an index of place names on the reverse. The map sheets are graticule-based, each covering 15′ of latitude, but varying in east-west extent from 22.5′ of longitude in the south to 36′ in the north. A complete set of the 727 sheets may be purchased in three volumes.

Soviet military topographic mapping of Norway is available at the following scales: 1:1,000,000 (9 sheets, complete coverage, published 1980-1988); 1:500,000 (22 sheets, complete coverage, published 1976-1987); 1:200,000 (105 sheets, complete coverage, published

1974-1990); 1:100,000 (330 sheets, complete coverage, published 1969-1999) and city (1:10,000) topographic mapping of Kristiansand, Narvik, Stavanger and Tromsø published between 1975 and 1989. These products are available in print, digital raster and digital vector GIS formats from **East View Geospatial**.

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GIS/Vector

Digital mapping began at **SKV** in the early 1980s, and by the end of the decade the progressive digitizing of the 1:50,000 scale series was under way. This N50 vector database was completed in 1996. It is used in the production of revised 1:50,000 scale map sheets, the output of which has been increased to about 70 per year. There is also a more generalized N250 (1:250,000) database, used in the production of the helicopter and light aircraft maps for the **Norwegian Air Force**. An N1000 (1:1,000,000) vector database has been created for small-scale mapping and is used in the production of sheets of the national atlas, and two lower resolution vector databases have been derived from this, N2000 and N5000. These are suitable for small scale representations such as atlas maps. A digital terrain data set (DTED) has been captured from 1:50,000 scale contour data with a grid interval of 90 m, and a detailed road database (VBASE) with an accuracy generally of ±2 m has also been compiled. This contains all public and private roads longer than 50 m, and can be linked with the national register on real estate, addresses and buildings which was completed in 1994.

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Nautical

Hydrographic charting is also a responsibility of the **SKV**, although the main center for this is located at Stavanger. Norway has been in the forefront of the development of electronic charts, and specifically the development of the electronic chart as a component of an integrated electronic navigation system, ECDIS (Electronic Chart Display and Information System). An Electronic Chart Centre has been established in cooperation with the British **Hydrographic Office** to deliver electronic charts to the international shipping industry. The main paper products are a series of 116 1:50,000 scale nautical charts of the Norwegian coast and smaller scale charts of the Norwegian Arctic region. There is also a series of small craft charts for recreational users, mainly at 1:50,000 scale, and a series of fishery charts which include seabed information including the location of wrecks.

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Geological/Scientific

Norges Geologiske Undersøkelse (NGU), Trondheim, was founded in 1858, and is the national agency for providing information about bedrock, mineral deposits, surficial deposits and groundwater in Norway. This information is stored and disseminated through maps and, increasingly, digital databases.

The basic series of bedrock geological maps (*Berggrunns-geologisk kart*) is at 1:50,000 scale, and about half the land area has been covered in the series, although many sheets are only in a provisional black and white edition, and it is not planned to print all sheets in color. Descriptive manuals are published for some sheets. A 1:250,000 scale bedrock series begun in 1970, was expected to be completed in 1999. Some 1:100,000 scale sheets based on the old *gradteigskart* of **SKV** are also still in print.

Quaternary geological mapping has been carried out at 1:250,000, 1:50,000 and 1:20,000 scales, but the cover is less extensive. Most sheets are printed in color and some have separate texts. Those published since 1988 have the text incorporated on the map sheet. A mainly black and white series at 1:50,000 shows the location of sand and gravel resources, and location maps of industrial mineral and ore deposits are prepared at 1:250,000 scale. There is an extensive range of geophysical mapping, some of which also covers the Norwegian continental shelf. Geochemical data are held in digital form and can be plotted as maps, and a geochemical atlas of Finnmark was published in 1996.

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Imagery

Image maps of Norway and of the Oslo and Tromsø areas have been published by **Fjellanger Widerøe (FW)**, a commercial air photography company.

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Thematic

The Economic Map (*Økonomisk kartverk* (ØK)) is a large-scale series mainly at the scale of 1:5,000 with 5 m contours, and was designed for planning and resource management. It is also used for cadastral purposes and for registering prehistoric and other cultural monuments. The series was started in the early 1960s and now covers over half the land area. In the more upland areas, the scale of 1:10,000 is used with a 10 m contour interval. **SKV** coordinates this series but the individual sheets are compiled by the county and municipal authorities. The series is being digitized.

Norway also has a **Military Geographic Service** (**Forsvarets Militærgeografiske Tjeneste (FMGT)**). Civil aviation mapping is prepared by **Luftfartsverket**, Oslo, and is notified in Aeronautical Information Publications (AIP). It includes the ICAO series of 1:500,000 scale charts, which are produced in cooperation with **SKV**. 1:1,000,000 ICAO charts cover Bear Island, Jan Mayen and Spitsbergen.

NGU has also published a number of coastal zone maps of bedrock and quaternary deposits and has participated in a major survey of the Skagerrak which collected geological, geochemical, oceanographic and bathymetric data.

In the 1980s, the **Continental Shelf Institute** (now **IKU Petroleum Research**) undertook a regional mapping program for the Norwegian continental shelf. Bathymetric maps were prepared in cooperation with the **Norwegian Hydrographic Service**, and there was a series of geological sheets published in bedrock, quaternary and seafloor sediment versions.

The Hydrological Division of **Norges Vassdrags- og Energiverk (NVE)** has over the years produced a number of glaciological maps of individual glaciers for use in mass balance studies, and an inventory of all Norwegian (and Swedish) glaciers and ice caps was published in two volumes in 1969 (covering the south) and 1973 (the north). The volume covering south Norway was revised in 1988. New editions of some of the glacier maps have been published recently, including a new map of Ålfotbreen in 1996, and of Storsteinsfjellbreen in 1997.

Environmental mapping is undertaken by the **Norsk Institutt for Jord- og Skogkartlegging (NIJOS)**, formerly **Jordregisterinstitutt**, located at Ås. **NIJOS** is concerned with the planning, management and sustainable use of natural resources, and provides mapping and advice to government departments, principally the **Department of Agriculture**. It has been making soil maps since 1980 and has developed a soil information system using the ORACLE database and ARC/INFO GIS software. It has also compiled numerous vegetation maps at scales ranging from 1:5,000 to 1:50,000. These are now produced digitally and cover about 10 percent of the country, although originally it was intended to cover the whole country with a series of 1:50,000 scale vegetation maps. Products include printed maps, computer-generated color plots and digital data files. **NIJOS** is also concerned with forest inventory and landscape evaluation. Digital land types are being captured from the 27,000 sheets of the economic map series in a program. A methodology has also been developed for delimiting landscape regions at a national, sub-regional and municipal level. **NIJOS** is part of an agreement signed in 1992 known as geovekst, whose aim is to ensure compatibility between data sets from different organizations so that they can be linked in a common database (FellesKartdataBase (FKB)).

A limited amount of mapping of hydrogeology and groundwater resources has also been published, but there is currently a national program for improving water quality to which **NGU** is making a major contribution through groundwater survey and establishing a well-drilling database. Measurements of natural radiation have been carried out along Norwegian roads and have been used to compile a series of county maps of total gamma radiation.

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Atlas

SKV is responsible for the production of the Norwegian national atlas, *National atlas for Norge*. Its preparation began in 1979 and it was issued initially as a series of loose-leaf map sheets in various sizes and at various scales organized into 21 themes, with separate text booklets for each theme. The base maps were produced digitally, and recently, there has been a move towards completely digital production methods. From 1997, a new bound format for the atlas has been introduced, beginning with volumes on health, sport and vegetation. The earlier parts of the atlas contained many large format sheet at 1:1,000,000 scale. Sheets also include the Svalbard (Spitsbergen) archipelago.

In 1990-91, **SKV** published a three-volume gazetteer of all the settlement names contained on the 1:50,000 scale topographic map series. The volumes contain 340,000 names, referenced to the (M711) map series with UTM grid and geographical coordinates. The text is in Norwegian and English.

The *Store Norges-atlas*, published in 1996 by **Kunnskapsforlaget**, Oslo, is a revision of a 1992 edition published by **Hjemmets Bokforlag**. It is a substantial work, the core of which is a set of 1:250,000 scale topographic maps. The volume also contains maps of the environs of the country's main cities at 1:50,000 scale, a map and aerial photo section on Norwegian landscapes, and an index of the 48,000 place names contained in the maps. The main mapping has been derived from **SKV's** digital N250 vector database, and a 100 m resolution DTM has been used to create the hill shading.

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Tourist/Reference

In addition to the main map series, **SKV** publish a number of special touring and leisure maps at various scales. Many of these are published in association with the **Norwegian Tourist Association** and with local tourist organizations and include skiing routes and descriptive information on leisure activities. There is also a growing list of street maps of towns, and a recent development has been the production of a series of folded county maps (*fylkeskart*), with descriptive text and illustrations on the reverse.

A set of 1:250,000 scale official road maps is produced by the **Norwegian Public Roads Administration, Statens Vegvesen (SW)**. These classify roads according to number of lanes and road width, and whether they are hard surface or gravel. Road distances are also shown. The 21 sheets are regularly updated, and are available either individually or as a set. **SW** also produces an annual camping map and a five-language heavy vehicle map of Norway.

A route planning package on CD-ROM – *Veiviseren. Ruteplanlegger for Norge* – has been created from N1000 digital map data. It is published by **SKV** with a program provided by **Karttakeskus Oy**, Finland. The road net is in vector form, but the background 1:1,000,000 scale maps are raster, and the CD comes packaged with a folded copy of this background map. The latest version incorporates the new Norwegian road numbers.

J.W. Cappelen Forlag, Oslo, have a long established set of road maps covering Norway in five sheets (the same maps are also packaged by **Kummerly and Frey**), and publish street maps of Oslo and several other towns and a 1:150,000 scale map of the Oslofjord area. They have also published five 1:100,000 scale recreation maps of popular mountain areas in cooperation with **SKV**. In 1995, **Capellen** issued an atlas of Norway, *Norgesatlas*, on CD-ROM, which incorporates the five-sheet map, a searchable index of 50,000 names, articles about the counties and communes and information about more than 2,000 interesting features. A version (2.0) was released in 1997.

Ugland Totalkart AS, Trondheim, produce recreational maps based on **SKV's** N50 map data, and street maps of towns. They provide a mapping service to numerous county and commune authorities.

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Census/Demography/Statistics

The **Statistisk Sentralbyrå (SSB)** collects and processes census data and has published maps of population distribution and contributed data to the national atlas.

The **Norwegian Polar Institute** (**Norsk Polarinstitutt (NPI)**), which moved to Tromsø in 1998, is responsible for research and mapping in Svalbard, Jan Mayen Island and in Dronning Maud Land in Antarctica.

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