



# The image collection of the Federal Office of Topography swisstopo – Key data and features

(December 2018)

swisstopo's image collection consists of three thematic groups: terrestrial, aerial and technical images. The collection of aerial images is again divided into themed sub-collections.

## General information

Name:	Federal Office of Topography swisstopo
Type of institution:	Federal Geo-information Centre
Address:	Seftigenstrasse 264 3084 Wabern
Email:	geodata@swisstopo.ch
Homepage:	<a href="http://www.swisstopo.admin.ch">http://www.swisstopo.admin.ch</a>
Access to the collection:	It is not possible to consult the analogue image collection. swisstopo's entire image collection will be digitised and made public over the next years. Images that are already available can be consulted via the information system for aerial photographs (LUBIS): <a href="http://map.lubis.admin.ch/">http://map.lubis.admin.ch/</a>
Period:	1882 - 2010
Image categories:	Portrait, Site, Architecture, Landscape, Nature, Mountain Photography, Aerial Images, Technical Images, Accident/Disaster, Traffic, Documentation, Scientific Photography
Collection history:	Since swisstopo was established in 1838 (initially as the Federal Topographical Bureau), it has produced numerous maps, photos, datasets and various other items. This 'Historic Geodata' is kept in a variety of archives and collections, and form a national treasure that is placed at the disposal of the public for a wide range of purposes, including in particular the monitoring of changes to the landscape.
Collection description:	swisstopo's image collection is part of the 'memory of Switzerland's landscape' and encompasses approximately half a million aerial and terrestrial images as well as photos documenting the activities of the Federal Office. The images of the landscape from the 1920s through to the present day are used for a wide range of purposes. Over the next few years, a special plan is to be implemented to ensure that the valuable originals are carefully preserved and easily accessible.
Literature:	Eidg. Landestopographie (Ed.): Hundert Jahre Eidg. Landestopographie. Ehemaliges eidg. topographisches Bureau 1838-1938. Erinnerungsmappe, Bern 1938. Schweizer Alpen-Club (Ed.): Unsere Landeskarten, Bern 1979. In: <i>Die Alpen: Zeitschrift des SAC. Special issue - year 55</i> Federal Office of Topography swisstopo: Geodata-news zum Thema 'Historische Geodaten', in: Geodata-news No. 24, Wabern 2011. Federal Office of Topography swisstopo 'LUBIS Viewer', in: <a href="#">Geodata-news No. 31, Wabern 2014</a>

Federal Office of Topography swisstopo: 'Terrestrische Aufnahmen online', in: [Geodata-news No. 40, Wabern 2018](#)

Federal Office of Topography swisstopo: Landscape memory, 2016, <https://www.swisstopo.admin.ch/en/knowledge-facts/geoinformation/landschaftsgedaechtnis.html>

Federal Office of Topography swisstopo: Historical images, 2018, <https://www.swisstopo.admin.ch/en/knowledge-facts/historical-images.html>

## Overview of the analogue photo collections in the swisstopo image collection

Collection	Terrestrial photos for the creation of the 1:50,000 National Map and the 1:10,000 fortification maps (mountain regions)
Period	1915– 1947 (Some older test photos, from the end of the 19th century)
Description	<a href="https://www.swisstopo.admin.ch/en/knowledge-facts/historical-images/terrestrial-images.html">https://www.swisstopo.admin.ch/en/knowledge-facts/historical-images/terrestrial-images.html</a> The terrestrial images served as a basis for establishing the 1:10,000 fortification maps and the 1:50,000 National Map. After World War I and up to the beginning of the 1950s, much of the Alpine region was topographically surveyed using terrestrial photogrammetry. Here, swisstopo topographers used the approx. 7,000 broadly distributed survey points, measured the position and altitude of each location with the aid of a phototheodolite (combination of surveying instrument and camera), and recorded photographic images on about 57,000 glass plates.
Number of pictures	approx. 57,000
Colour	Black-and-white
Image formats	9x12, 10x15 cm, 13x18 cm
Media	Glass negatives, paper prints
Level of indexing	Completed
Additional material	Source material, documentation (paper files)
Type of image	Site, Landscape, Nature, Mountain Photography, Traffic, Documentation, Scientific Photography

Collection	Aerial images
Period	1926 - 2010
Description	<p><a href="https://www.swisstopo.admin.ch/en/knowledge-facts/historical-images/aerial-photo.html">https://www.swisstopo.admin.ch/en/knowledge-facts/historical-images/aerial-photo.html</a></p> <p>swisstopo's aerial images are vertical or oblique high-resolution landscape photographs. Their main purpose is to serve as the basis for updating the National Map and producing the SWISSIMAGE orthophoto mosaic. The photos encompass the entire country and are taken at regular intervals. The aerial images contain a great deal of information and are used as a valuable source for identifying dynamic processes, as well as for documentation and planning purposes.</p> <p>The scale of the images usually varies between 1:20,000 and 1:30,000. They are available in black and white for the period from 1927 to 2003, and in colour from 1998.</p> <p>One section of the collection contains all aerial photos that were taken in order to meet the needs of various federal inventories (meadows, moorlands, dry pastures), for monitoring glaciers or documenting natural disasters (storms, floods, avalanches, rock falls, landslides, etc.), and for a variety of other special requirements. They are available as colour, colour infrared or black and white images with scales ranging from 1:3,000 to 1:40,000.</p> <p>Digital cameras have been used for taking aerial photos since 2008. These devices scan the landscape in strips and all images are available in digital format only.</p>
Number of pictures	approx. 370,000
Colour	Black-and-white, colour
Image formats	Various (see sub-collections)
Media	Various (see sub-collections)
Level of indexing	Partly completed (see sub-collections)
Additional material	See sub-collections
Type of image	Landscape, Nature, Mountain Photography, Aerial image, Traffic, Accident/Disaster, Documentation, Scientific Photography

Collection	Aerial images
Sub-collection	Aerial images for the revision of the Siegfried Map
Period	1926– 1954
Description	<p>In the mid-1920s, Swiss topographers entered the age of aerial photogrammetry. Photos were thus taken of the surface area of Switzerland from planes equipped with special cameras for aerial photographs. These aerial images were used to update the Swiss Topographical Atlas (Siegfried maps) and later also the 1:50,000 and 1:25,000 national maps. The vertical and also partly oblique photographs were taken on glass negatives and required great concentration and physical demands from the operators, because all manipulations had to be carried out by hand. No completely automatic cameras existed at the time. At the beginning, the cameras were hand-held; later they could be hung from the floor of the plane using a special suspension device. It was not yet possible with the technology of that time to photograph the entire country so this collection includes many individual photos besides the overlapping images.</p>
Number of pictures	approx. 45,000
Colour	Black-and-white
Image formats	13x13, 10x15 cm, 13x18 cm
Media	Glass negatives, paper prints

Level of indexing	Completed
Additional material	Source material, documentation (paper files)
Type of image	Landscape, Nature, Mountain Photography, Aerial image, Traffic, Documentation, Scientific Photography

<b>Collection</b>	<b>Aerial images</b>
Sub-collection	Aerial images for the revision of the Siegfried Map as well as the 1:25,000 and 1:50,000 national maps
Period	1946– 1972
Description	The technical evolution of aerial photography cameras and planes changed the format and material of the aerial photographs. From 1946, aerial photographs were taken in 18x18cm format on synthetic negatives (mostly cellulose acetate). Flight and photography technology became simpler and aerial photographs were taken that regularly overlapped along the flight lines (60-70%). These aerial photographs served to update the Siegfried maps and to create and update the 1:25,000, 1:50,000, 1:100,000 and 1:500,000 national maps. Besides this, Switzerland has been flown over systematically at regular intervals since 1968. Since the materials in this collection are not resistant to ageing and are subject to the “vinegar” syndrome, this has been systematically recorded, preserved and digitised since 2008.
Number of pictures	approx. 41,000
Colour	Black-and-white
Image format	18x18
Media	Cellulose nitrate and acetate-negatives, paper prints
Level of indexing	Completed
Additional material	Source material, documentation (paper files)
Type of image	Landscape, Nature, Mountain Photography, Aerial Image, Traffic, Documentation, Scientific Photography

<b>Collection</b>	<b>Aerial images</b>
Sub-collection	Aerial images for updating the complete 1:25,000 and 1:50,000 National Maps
Period	1967 - 2004
Description	In 1967, the format of the aerial photographs was increased to 23x23cm thanks to the use of a new camera, allowing the coverage of larger areas of the landscape. In general, flight and photography technology improved, as can be seen in the regularity of the flight lines and the overlapping of photos within these flight lines. Flight lines in this format can contain up to 40 images. The aerial images have only been taken in colour since 1998 (except for some earlier colour film tests), including for the updating of the national maps and of SWISSIMAGE, the digital colour orthophoto mosaic of Switzerland. Colour-infrared and false-colour images were also taken. Colour-infrared images allow the visualisation of ground cover and vegetation thanks to their specific sensitivity in the infrared spectrum. Other false-colour images show vegetation in tones of red, for example and built-up areas or wasteland in tones of blue, thus providing important information for various scientific fields.
Number of pictures	approx. 60,000
Colour	Black-and-white

Image formats	23x23
Media	Cellulose acetate and polyester-negatives, paper prints
Level of indexing	Completed
Additional material	Source material, documentation (paper files)
Type of image	Landscape, Nature, Mountain Photography, Aerial Image, Traffic, Documentation, Scientific Photography

Collection	Aerial images
Sub-collection	Colour aerial images for updating the complete National Map and for SWISSIMAGE (the digital colour orthophoto mosaic of Switzerland)
Period	1998 - 2007
Description	In 1967, the format of the aerial photographs was increased to 23x23cm thanks to the use of a new camera, allowing the coverage of larger areas of the landscape. In general, flight and photography technology improved, as can be seen in the regularity of the flight lines and the overlapping of photos within these flight lines. Flight lines in this format can contain up to 40 images. The aerial images have only been taken in colour since 1998 (except for some earlier colour film tests), including for the updating of the national maps and of SWISSIMAGE, the digital colour orthophoto mosaic of Switzerland. Colour-infrared and false-colour images were also taken. Colour-infrared images allow the visualisation of ground cover and vegetation thanks to their specific sensitivity in the infrared spectrum. Other false-colour images show vegetation in tones of red, for example and built-up areas or wasteland in tones of blue, thus providing important information for various scientific fields.
Number of pictures	approx. 23,000
Colour	Colour
Image formats	23x23
Media	Polyester slides, paper prints
Level of indexing	Completed
Additional material	Source material, documentation (paper files)
Type of image	Landscape, Nature, Mountain Photography, Aerial Image, Traffic, Documentation, Scientific Photography

Collection	Aerial images
Sub-collection	Photos taken on behalf of clients and for special requirements of the Aerial Photography Flying and Coordination Service
Period	1961 - 2010
Description	Sub-collection that includes photos taken in the framework of nature monitoring. Federal inventory of moors, wetlands and dry grasslands, glacier monitoring, documentation of natural phenomena (storms, floods, avalanches, rockslides), photos of areas of national importance (Swiss National Park), special projects for Federal Offices or universities and cadastres. According to the field of use, the photos are taken with black and white, colour or colour-infrared film.
Number of pictures	approx. 110,000

Colour	Black-and-white, colour
Image formats	23x23
Media	Cellulose-acetate and polyester films: negatives, slides, infrared and false-colour
Level of indexing	Completed
Type of image	Landscape, Nature, Mountain Photography, Aerial Image, Traffic, Accident/Disaster, Documentation, Scientific Photography

Collection	Aerial images
Sub-collection	Aerial images for the production of master plans (Directorate of Cadastral Surveying on behalf of municipalities).
Period	From 1927
Description	<p>Since the end of the 1920s, the Directorate of Cadastral Surveying has maintained a flight service with its own measurement planes for photogrammetric images in cadastral surveying.</p> <p>The Directorate of Cadastral Surveying was formerly attached to the Federal Office of Justice. After the temporary change to the Federal Office for Spatial Planning and, a few years later, at the end of 1999 to the Swiss Federal Office of Topography (swisstopo), the Directorate of Cadastral Surveying flight service was merged with that of swisstopo on 1 January 2000.</p>
Number of pictures	approx. 85,000
Colour	Black-and-white, colour
Image formats	10x15 cm, 13x13 cm, 13x18 cm, 15x15cm, 18x18 cm, 23x23 cm
Media	Glass negatives, cellulose nitrate and acetate-negatives, polyester-negatives, paper prints
Level of indexing	Partly completed Completion planned: 2017– 2022
Additional material	Source material, documentation (paper files)
Type of image	Landscape, Nature, Mountain Photography, Aerial Image, Traffic, Documentation, Scientific Photography

Collection	Aerial images
Sub-collection	Aerial images for the Photographic Atlas 1946 (“American flights”)
Period	1946
Description	Sub-collection that includes aerial photographs taken shortly after the end of the Second World War. From May to September 1946, Switzerland was flown over by the US Air Force in order to create an intercontinental aeronautical map of the whole country. 64 so-called missions were flown with a total of 175 flight lines, mainly East to West and West to East.
Number of pictures	approx. 4,200
Colour	Black-and-white
Image formats	23x23
Media	Cellulose nitrate-negatives, paper prints

Level of indexing	Completed
Additional material	Source material, documentation (paper files)
Type of image	Landscape, Nature, Mountain Photography, Aerial Image, Traffic, Documentation, Scientific Photography

Collection	Technical images
Period	From 1882
Description	This is a separate photographic collection, integrated into the photo collection, of great documentary value. The oldest photos date back to 1882. The focus on fields varies over the decades. At the beginning, the collection mainly contained photographic documentation of the national triangulation network. Pictures were taken of church and house towers, summits and pyramidal and pole signals, in particular. Besides site and landscape photos, the collection also documents the geo-data working methods and topographers of the time, with their measurement instruments and tools for creating maps. The new grounds of the Federal Office of Topography in Wabern and the construction stages from 1935 were also photographed in detail. The collection also includes portraits of all staff members of the Federal Office of Topography since approx. 1920.
Number of pictures	approx. 10,000
Colour	Black-and-white
Image formats	Various
Media	Glass negatives, Cellulose nitrate and acetate-negatives, paper prints, postcards
Level of indexing	Partly completed Completion planned: 2017– 2020
Type of image	Portrait, Site, Architecture, Landscape, Nature, Mountain Photography, Technical Images, Documentation, Scientific Photography