



## FINDING AID

# **RG 1-26 AERIAL PHOTOGRAPH COLLECTION 1940s?-1989, 1996, and undated**

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## ***HISTORY***

The use of aerial photography for the management of Yellowstone's resources seems to have begun in the 1940s. Aerial photography greatly expanded during World War II and that technology was soon adopted by park managers.

The photos in this collection were mainly used by the park's Fire Cache for fire management. The Fire Cache provides the primary support for fire suppression as well as other emergency activities within the park. However, some photos were clearly used for other projects including vegetation, range, and geothermal studies. They are also used for forest management and were likely rendered in 3D with the use of a stereoscope. Photos were also used in the late 1960s and early 1970s for the management of backcountry areas, and possibly during the efforts to establish designated wilderness areas in the park.

While aerial photos are still used for comparative studies, satellite images have largely replaced photos for current fire modeling and other research. It is unlikely Yellowstone will create additional sets of aerial photographs.

## ***SCOPE AND CONTENT***

### **AERIAL PHOTOGRAPH COLLECTION** 1940s?-1989, 1996, and undated

***CATALOG NUMBER*** YELL 131727

***VOLUME*** 32 LF

***DESCRIPTION*** Series I consists of black and white and color aerial photographs, as well as some color positives, of Yellowstone National Park and some surrounding areas. Some groups of photos include keys which help in identifying photos from a specific location.

Series II contains infrared, satellite, and radar images. These images appear to have been used by scientists in the study of Yellowstone's geothermal features.

Researchers may find these photos valuable for several purposes including land use change, landform change, climate change, and vegetation, range, and archaeology studies.

***ORGANIZATION*** Organized into two series: Series I, Aerial Photos; Series II, Infrared, Satellite, and Radar Images. The materials are arranged chronologically within series.

***PROVENANCE*** Transferred from Bob Ross, 1958?; Office of the Park Photographer, 1991; and the Fire Cache, 2005, 2007, and 2009.

***RESTRICTIONS*** NO

***ASSOCIATED MATERIALS***

- Ryker Model M-11 Stereoscope (YELL 147377), Yellowstone Park Museum Collections
- Ross, Robert L. *Climax Vegetation of Montana Based on Soils and Climate* (1976), Yellowstone Research Library
- RG 03 1988 Fires, Yellowstone Park Archives
- RG 01-24 Vegetation Program Records, Yellowstone Park Archives

## ***FILE UNIT DESCRIPTIONS***

### **Series I: Aerial Photos**

#### *1940s? PHOTOS*

Black and white photos. Undetermined location.

#### *1951 PHOTOS*

Eight black and white photos. They are of an unknown location, but one is marked "Gardner Lake."

#### *1952 PHOTO*

Ten black and white photos. They are of an unknown location but one is marked "Gardner Lake."

#### *1954 PHOTOS USGS*

Black and white photos that cover the entire park. Includes a key to photos.

#### *1954 PHOTOS ARMY MAP SERVICE*

Black and white photos that cover the entire park. Includes a key to photos.

#### *1956 PHOTOS*

Black and white photos that cover the Reese Creek area in the northern section of the park.

#### *1956-1957 PHOTOS*

Black and white photos that cover the areas between Yankee Jim Canyon and Gardiner.

#### *1957 PHOTOS*

Black and white photos that cover the northern half of the park (i.e. the northern range). Includes a key to photos.

#### *1958 PHOTOS*

Black and white photos. Undetermined location.

#### *1961 INDEX*

Index only (no photos), for color aerial photos of the Old Faithful Area.

**Series I: Aerial Photos (cont.)***1961-1962 POSITIVES*

Color positives (i.e. transparencies) that cover the entire park.

*1962 MICHIGAN ANG PHOTOS*

Black and white photos, which cover the northern third of the park. Includes a key to photos.

*1962 PHOTOS*

Black and white photos that cover the U.S. Forest Service's Gallatin Range area, including portions of Yellowstone.

*1963? PHOTOS*

Black and white photos, which cover Yellowstone's northern range. They were used by Robert "Bob" L. Ross for range site and condition surveys. Photos may be from 1958.

*1965 PHOTOS*

Black and white photos. Locations seem to focus on geothermal areas and include: West Thumb; Lower, Midway, and Upper Geyser Basin; Crater Hills and Mud Volcano; Summit Lake; Mammoth Hot Springs; Heart Lake; Roaring Mountain, Norris Geyser Basin, and Gibbon River. Includes a key to photos.

*1969 POSITIVES*

Color positives (i.e. transparencies), which cover the entire park. Includes a key to photos.

*1969, 1971 PHOTOS*

Color photos of the entire park. Includes a key to photos.

*1970 PHOTOS*

Black and white photos of the Tower and Roosevelt areas.

*1972 PHOTOS*

Black and white photos, which cover the western boundary of the park. Includes a key to photos.

*1973 PHOTOS*

Black and white photos that cover the northern and western boundaries of the park. Includes a key to photos.

**Series I: Aerial Photos (cont.)***1976 PHOTOS*

Black and white photos of the following locations: Mammoth Hot Springs; Old Faithful; and the Grand Loop Road between Mammoth and Indian Creek.

*1976 COLOR PHOTOS*

Fourteen color photos of the Lake, West Thumb, and Grant Village areas.

*1977 PHOTOS*

Black and white photos of the following locations: Mammoth Hot Springs; Old Faithful; and the Grand Loop Road between Mammoth and Indian Creek.

*1978 PHOTOS*

Black and white photos of the Tower and Roosevelt areas.

*1979 INDEX*

Index only (no photos).

*1984 PHOTOS*

Color photos. Undetermined location.

*1987 PHOTOS*

Both color and black and white photos. Undetermined location.

*1988 PHOTOS*

Color photos which cover the entire park. Includes a key to photos.

*COLOR PHOTOS, UNDATED*

Color photos. Undetermined location.

*BLACK AND WHITE PHOTOS, UNDATED*

Black and white photos of the following locations: Canyon; Dragon's Mouth; Firehole and Gibbon Rivers; Fishing Bridge; Fountain Paint Pots; Lake Yellowstone Hotel; Mammoth; Old Faithful; Potts Hot Springs; Tower-Roosevelt; and West Thumb.

*AERIAL PHOTO INTERPRETATION ARTICLES, 1960s*

The articles appear to have been used to interpret the photos and include topics on tree identification using a stereoscope and the use of aerial photos for forest management.



**Series II: Infrared, Satellite, and Radar Images***FLIGHT LINE MAPS, INFRARED, UNIVERSITY OF MICHIGAN, 1961*

Large maps detailing overflights. Does not contain photos.

*INFRARED SCANNER SURVEY, 1964*

Seven infrared images and a key to overflights

*FLIGHT LINE MAP, NASA MISSION 32, THERMAL INFRARED, SEPTEMBER 1966*

Large map detailing overflights. NASA aircraft used thermal infrared imagery (Reconofax IV system) on September 20 and 21, 1966.

*FLIGHT LINE MAP, INFRARED, HRB-SINGER [AUGUST 1966?]*

Large map detailing overflights

*MISSIONS 19, 20, 21, 22, HRB-SINGER, AUGUST 1966*

Microfilm (two 2¾" rolls)

*FLIGHT LINE MAP, MULTI SPECTRAL, UNIVERSITY OF MICHIGAN, 1967*

Large map detailing overflights

*INFRARED IMAGERY, UNIVERSITY OF MICHIGAN, SEPTEMBER 1967*

Microfilm (one 2¾" roll)

*RADAR MOSAIC, USGS, 1968*

Large radar mosaic image

*FLIGHT LINE MAP, AERIAL THERMOGRAPHIC MOSAIC, [UNIVERSITY OF MICHIGAN?], 1969*

Large map detailing overflights

*THERMOGRAPHIC MOSAIC, UNIVERSITY OF MICHIGAN, 1969, 1972*

First aerial thermographic mosaic of Yellowstone National Park created by the USGS and the Air Force Cambridge Research and Optics Laboratory, and later analyzed by researchers at the University of Michigan.

*INFRARED FILM, USGS, 1969*

Film (two 9½", four 2¾", and one 5" rolls)

**Series II: Infrared, Satellite, and Radar Images (cont.)**

*[INFRARED?] FILM, MAY 1970*

Film (two 9½" rolls)

*LANDSAT IMAGE, NASA EARTH RESOURCE TECHNOLOGY SATELLITE (ERTS), FALSE COLOR, AUGUST 1972*

Large false color image of entire park

*AERIAL PHOTOS, NASA AMES RESEARCH CENTER, AIRBORNE INSTRUMENTATION RESEARCH PROJECT, AUGUST 1989*

Film (one 9½" roll). Images generated by Landsat 5 used to study post-fire impacts on Yellowstone's ecosystem.

*LANDSAT VHS TAPE, 1996*

VHS tape rendering of a 30 meter Landsat fly-by. The software used for selecting the flight path and rendering of images was Surveyor.

## ***CONTAINER LIST***

### **Series I: Aerial Photos**

#### *Box 1*

1940s? Photos  
1951 Photos  
1952 Photos

#### *Boxes 1-4*

1954 Photos USGS (includes key)

#### *Boxes 5-6*

1954 Photos Army Map Service (includes key)

#### *Box 7*

1956 Photos  
1956-1957 Photos  
1957 Photos (includes key)

#### *Box 8*

1958 Photos

#### *Box 9*

1961 Index

#### *Boxes 9-17*

1961-1962 Positives

#### *Boxes 18-19*

1962 Michigan ANG Photos (includes key)

#### *Box 20*

1962 Photos  
1963? Photos

#### *Boxes 20-22*

1965 Photos (includes key)

#### *Box 23*

1969 Positives (includes key)

**Series I: Aerial Photos (cont.)***Boxes 24-32*

1969, 1971 Photos (includes key)

*Box 33*

1970 Photos  
1972 Photos (includes key)  
1973 Photos (includes key)  
1976 Photos  
1976 Color Photos  
1977 Photos (includes key)  
1978 Photos

*Box 34*

1979 Index  
1984 Photos

*Box 35*

1987 Photos

*Boxes 36-37*

1988 Photos (includes key)

*Box 38-39*

Color Photos, undated

*Box 39*

Black and White Photos, undated  
Aerial Photo Interpretation Articles, 1960s

**Series II: Infrared, Satellite, and Radar Images***Box 39*

Flight Line Maps, Infrared, University of Michigan, 1961  
Infrared Scanner Survey over Yellowstone Park, 1964  
Flight Line Map, NASA Mission 32, Thermal Infrared, September 1966  
Flight Line Map, Infrared, HRB-Singer [August 1966?]  
Missions 19, 20, 21, 22, HRB-Singer, microfilm (two 2¾" rolls), August 1966  
Flight Line Map, Multi Spectral, University of Michigan, 1967  
Thermal Imagery [of] Yellowstone, ca. 1967  
Infrared Imagery, University of Michigan, microfilm (one 2¾" roll), September 1967  
Radar Mosaic, USGS, 1968  
Flight Line Map, Aerial Thermographic Mosaic, [University of Michigan?], 1969  
Thermographic Mosaic of Yellowstone National Park, Williams and others, 1969  
Thermographic Mosaic, University of Michigan, April 1969  
Color Infrared [film], USGS, (four 2¾", two 9½", and one 5" rolls), August 1969

**Series II: Infrared, Satellite, and Radar Images (cont.)**

[Infrared?] Film, (two 9½" rolls), May 1970

Yellowstone Hot Spots revealed on Mosaic, 1972

Landsat Image, NASA Earth Resources Technology Satellite (ERTS), False Color, August 1972

Aerial Photos, NASA Ames Research Center, Airborne Instrumental Research Project, film (four 9 ½" rolls), August 1989

Landsat VHS Tape, 1996