Repeat photography on range and forest lands in the western United States

RICHARD H. HART AND WILLIAM A. LAYCOCK

Abstract

Repeat photography is a valuable tool for demonstrating the effects over time of climate, management and other variables on range and forest lands. This bibliography lists 175 publications using repeat photography, with information on the ecosystems photographed, states where they are located, number of photographs, and dates when the photographs were taken. References to photography of 19 natural ecosystems, 2 cultivated ecosystems and 3 special problems are listed. The interval between photographs may be over a century or less than a year.

Key Words: condition, trend, succession, invasion, brush, history

“One picture is worth a thousand words,” says an often-quoted proverb. A pair or sequence of photographs, taken over time, can be even more valuable than a single photograph for documenting change in range or forest vegetation. In many cases, old photographs are the only documentation for past range or forest conditions; no numerical data exist. Also, non-specialists who are not accustomed to evaluating numerical data can see and understand changes over time as shown in photographs.

Repeat photography is most often used to show change over decades or as long as a century, with or without human intervention. Many of the entries in this bibliography are of this sort. Other entries include before-and-after photographs, showing short- or long-term effects of treatments such as chemical and mechanical brush and weed control, fire, grazing, and recreational use. Long-term repeat photography has been used to show recovery of abandoned townsites (Amundsen 1991) and recovery after timber cutting, mining, or wildfire.

Repeat photography can document trend as well as condition. For example, while further improvements in riparian management and condition are needed in many areas, this does not indicate that the trend is down. Johnson (1987) documented tremendous increases in woody plant vegetation, indicating upward trend, on riparian areas between the 1860’s and the 1970’s. Upward trend was shown on the Laramie, North Platte, Sweetwater, and Green Rivers, and on Box Elder, Beaver Dam, and Rock Creeks in Wyoming.

Sequences of photographs can document change over decades on an annual or near-annual basis. The sequences of Sharp et al. (1990, 1992) are examples.

Many opportunities for repeat photography have not been exploited. Enough time has passed since re-photography of the sites in several of the publications that changes might be detected if they were re-photographed again. Vankat and Major (1978) rephotographed over 300 sites, but published only 5 pairs. Museums, universities, libraries, and private individuals own collections of old photographs that could be re-photographed to provide information on vegetation changes. Weber (1993) contains examples of photographs by Carleton E. Watkins, Eadward Muybridge, Timothy O’Sullivan, Andrew J. Russell, William Henry Jackson, John K. Hillers, R. Wirtick, and F. Jay Haynes, dating back to as early as 1866, and the libraries and archives in which these and other photographs can be found.

Several entries in this bibliography include suggestions for re-locating and re-photographing previously photographed sites, and for interpreting the changes noted. These include Dingus (1982), Dutton and Bunting (1981), Gruell (1980a, 1983), Humphrey (1987), Johnson (1987), Magill (1989), and McGinnies et al. (1991). Knapp et al. (1990) discuss the use of repeat aerial photography.

Rogers et al. (1984) published a bibliography of repeat photography, listing several hundred publications containing photographs of the same scene taken decades or as much as a century apart. Many of these photo sets were of urban areas, glaciers, or other subject matter of little interest to range and forest managers and researchers. This bibliography lists all entries from Rogers et al. (1984) that include photographs of range or forest lands; publications issued after Rogers et al. (1984) completed their collection; and a few publications which they missed.

Entries have been tabulated (Table 1) by state and ecosystem. We did not find any examples of rephotography from North Dakota, Nebraska, Kansas, or Oklahoma; Alaska, or Hawaii; or from New Mexico, Arizona, New Hampshire, and Maine. We did find examples from all the other western states plus Missouri.

Entries are in abbreviated form, including only the last name of the first author and the last 2 digits of the year of publication (Table 1). Additional information on numbers of photo sets, number of photos per set, and dates when photos were taken are included in the notes under each bibliographic entry. For example, “1964–57” indicates photos were taken sometime between 1964 and 1967 inclusive, while “1964 & 1967” indicates photos were taken in 1964 and 1967. Locations and ecosystems are noted when this information is not included in the title of the publication.

Table 1. References to repeat photography of range and forest lands in the western United States.

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Annotated Bibliography


Ames, C. R.

Amundson, M.


Two pairs, 1921-23 & 1947.


Seven pairs, 1 trio, no dates or locations.


Twenty-four pairs, 1907-30 & 1962-63.


Two pairs, 1921-23 & 1947.


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One pair, 1900 & 1983.

Two pairs, 1866 & 1961-73, conifers and meadow.

One pair, 1901 & 1964, gully control, no location.

One pair, 1934 & 1980.


Two pairs, 1953 & 1975, sagebrush-grass, Arizona.


Tall Timbers Res. Station, Tallahassee, Fl.
Two pairs, 1893 & 1963 and 1903 & 1941.

Two hundred three pairs, 1892-93 & 1983-84. One hundred thirty-four desert, 40 semi-desert grassland, 12 oak and juniper woodland, 2 semi-desert grassland and scrub, 8 semi-desert grassland and woodland, 2 riparian, 5 urban. Arizona, New Mexico, Chihuahua, Sonora.


Five pairs; 3 months to 2 years recovery after intensive use under Savory Grazing Method, color, riparian and sagebrush-grass, Colorado.


One set of five, 1903 through 1960.


One trio, 1907, 1960 & 1985, sagebrush-grass, Nevada, color.


One pair, 1939 & 1957.

Weaver, H. 1967. Some effects of prescribed burning in the Coyote Creek test area, Colville Indian Reservation, J. For. 65:552–558.


One trio; 1907, 1960 & 1985; desert, California.


Several pairs and sets from Arizona, South Dakota and Wyoming.


