

A HISTORY OF THE
SANDSTONE CREEK AREA
UP-STREAM FLOOD PREVENTION PROJECT

By Annie Laurie Steele*

The Sandstone Creek Watershed Project pioneered flood control programs in Oklahoma and in the nation. As part of the Upper Washita Conservation District, it set the pattern followed in the entire Washita River watershed. The Washita in turn served as a pattern for large river watersheds throughout the world.¹

In this new approach to flood control and soil conservation, the Soil Conservation Service and 127 landowners in the Sandstone watershed worked out plans to make the earth one vast sponge. The farmers planted deep-rooted grasses that canaled rainfall into natural underground reservoirs. They changed to contour plowing and crop rotation, and built 450 miles of terraces. To hold back heavy rains that the soil could not soak up, a network of small earthen dams was built. The grand design was to "trap the raindrops where they fell."²

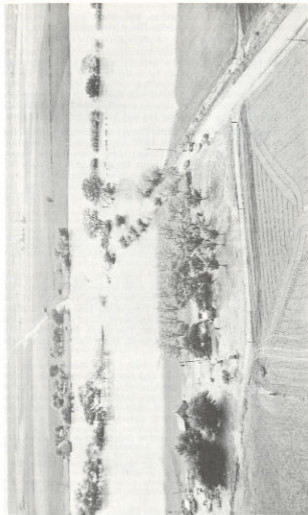
Until 1952 few waterways in the nation had more floods mile for mile than Sandstone Creek—an average of nine each year. So much soil was washing down from bleeding gullies and eroded hillsides that the creek was filling up half a foot a year.

Sandstone Creek, a tributary to the Washita River, runs through the rolling Red Plains of western Oklahoma. Most of the soils were formed under prairie cover, but some were formed under mixed grass and shinnery. Depth of the soil varies from shallow or very shallow to deeply formed soils of stream terraces and alluvium areas. The watershed, consisting of 68,770 acres, is 15 miles long and 6 miles wide. Construction work started in 1950 and was largely completed in 1952. The Sandstone Creek watershed lies mostly within a triangle formed by the towns of

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¹ *Cheyenne Star*, February 14, 1963.

² *Readers' Digest*, June 6, 1956, pp. 135-138 (Condensed from *National Municipal Review*, May, 1956) Peter Farb, "A Flood Control Plan That Works."



(TADA-SGS Aerial Photo, 1954)

FLOOD ON THE UPPER WASHITA RIVER
Nose barn in background surrounded by water.
Scene of flood north of Stafford, Custer County.

Sayre, Elk City and Cheyenne, and flows in a northeasterly direction, entering the Washita River about eight miles south-west of Hammon.¹

Before the advent of the land openings to settlement by pioneer farmers, Oklahoma's western prairies had a top layer of spongy soil held in place by native grasses ranging from a tenuous hold of the short grasses on rough hillsides to deep penetrating networks of ten-foot root systems of blue stem and Indian grass. This layer of natural growth and its humus soaked up much of the rain, allowing the rest to flow into the streams.²

A large part of Roger Mills County was permanently settled during the years 1905 through 1909, when rainfall was plentiful. Drought struck in 1910 and lasted three years. Rains blessed the plains from 1914 to 1930 except for a dry spell in 1917-1918. When the characteristic downpours came, hills that had been turned to crops lost their precious top layer. Runoff down new furrows picked up rich humus and soil nutrients as it made its way to the creeks and rivers.³

The once sparkling water of the Washita took on a brownish color. Silt fans appeared and the springs began to disappear or go dry during the summer. The river became known as the "muddy Washita." This once beautiful river took on a ragged dress of caving banks, silt-filled channels, and dry stream beds. Frequent floods became a serious problem to the farmers along the streams.

Homesteading had required farmers to plow ten acres of every 160. Soon additional acres were broken, and much of this was poor land which should not have been plowed.⁴ By the spring of 1931 plows had broken most of the land in the southern plains and several million marginal acres. Dust storms began in the autumn of 1933 and blew for five years. Many fields lost from two to twelve inches of topsoil. Some fields became sand dunes.⁵

When the rains came, floods roared down the eroded canyons sweeping away tons of topsoil and burying fields under a layer of silt. Sandstone Creek averaged nine floods a year with an annual damage of \$60,000. In April 1934 a storm produced eleven inches of rainfall on the watershed and that of neighboring tributaries, causing the loss of 17 lives near Hammon.⁶

¹ U.S. Department of Agriculture, Soil Conservation Service, May 1952, "Where Floods Begin." The Sandstone Creek area is generally located in Roger Mills, Beckham, Custer and Washita counties.

² Senator Robert S. Kerr, *Land, Wood, and Water*, (New York: Fleet Publishing Company, 1960), p. 85.

³ *Ibid.*, p. 67; also, "The Washita, Land Treatment and Flood Prevention," U.S. Department of Agriculture, S.C.S., Stillwater, Oklahoma, November, 1934.

⁴ *Ibid.*

⁵ Kerr, *op. cit.*, p. 67.

⁶ U.S. Department of Agriculture, *op. cit.*, p. 2.

Out of such ordeals came an awareness of the need for action and the decision by farmers and townspeople to seek technical advice and assistance in looking for a solution to their problem. In the early 1930's a group of leaders along the Washita River had realized the urgency for taking steps to reduce the flooding of fertile land lying along the river and its tributaries. As a result, mainly of the efforts of this group, Congress in 1936 authorized the Department of Agriculture to survey the problems and needs of the area.⁹

In 1944 Congress passed a flood control act authorizing the Secretary of Agriculture to undertake works of improvement for runoff and waterflow retardation and soil erosion prevention in eleven watersheds in the United States, the Washita being one of them. Soil Conservation Districts and the Soil Conservation Service concluded that the best way to develop a flood prevention program was to consider problems and needs of one entire creek watershed. As a result, the Washita River was divided into 64 subwatersheds for planning purposes.¹⁰

Sandstone Creek was the first watershed to be completed using the concept of a coordinated program of land treatment and upstream detention reservoirs for flood control. Land improvement included terraces, field diversions, cover cropping, strip cropping, contour cultivation, seeding in native grasses, fencing of grassland, building farm ponds, and improved range management. The mechanical structures were primarily detention reservoirs and gully plugs. These plugs, which themselves were small reservoirs, slowed the runoff flow through deep gullies and filtered out the silt, keeping most of it from piling up in larger detention reservoirs. Eventually they began to fill themselves and started healing over the gullies.¹¹

The success of this first flood control project on Sandstone Creek proved to be dramatic. In addition to cutting soil erosion and practically eliminating flood damage, many other benefits have been, and will continue to be, realized: irrigation of field crops and gardens, a dependable supply of water for livestock, increased land value, increased production, opportunity for the development of recreational areas, fishing and wildlife benefits, and many others. "This plan for the Washita soon attracted wide support. There was real appeal to the idea of small bands of farmers fighting the scourge of floods with little dams and terraces, attacking trouble at its source . . ."¹²

⁹ *Ibid.*, p. 3.

¹⁰ *Ibid.*, p. 10.

¹¹ Charles Straub, "Little Dams Stop Big Floods," *The Farm*, Vol. 12 (1954), U.S.D., S.C.B. Reprint.

¹² U.S. Department of Agriculture, *op. cit.*, p. 11.

The U. S. Department of Agriculture gives much of the credit for the success of this project to those people who owned the land. No technical program of such magnitude had been attempted in the history of American agriculture. The leadership of the program rested on local groups. Local action was required to start any individual watershed development. Locally planned, canvassing and other means were required to create a public understanding of the program and the need for it. Completing the soil conservation practices was the landowner's job, and easements were required for construction sites. The success or failure then depended on the people who owned the land.¹³

The outstanding conservation enthusiast, lay leader and spokesman for the Sandstone Creek project in the Upstream Flood Prevention and Watershed Development Program has been Mr. L. L. Males, banker of Cheyenne in Roger Mills County. Mr. Males' ardent support of soil conservation and good land use started thirty years ago. One who knows him well, writes of him: "His close association with the economy of an agricultural community made him realize that the muddy floodwaters of the Washita River was not just a calamity that affected the few who were flooded, but that the muddy water was the life blood of the country and that such disastrous waste was the life blood of the country and that such disastrous waste was fast destroying the wealth of his community."

When he became president of the Security State Bank of Cheyenne, Mr. Males put the resources of the bank behind a conservation program. His bank bought terracing equipment, encouraged farms to terrace their land, and loaned them money to do the job. Through the years, Mr. Males has written letters and talked to groups of all kinds from coast to coast, telling the Sandstone Creek story of the first completed upstream watershed in the world and its effect on preventing flooding of farm land in Oklahoma. This has encouraged other watershed programs

¹³ *Ibid.*, p. 12. (Mrs. Annet L. Steele wishes to express grateful acknowledgement to those who helped make possible this account of the Sandstone Creek Project: Clarence Fly, Luther Nunley, Wilbur Payne of the Chickasha U.S.D.A. Soil Conservation Service offices; Wm. L. Vaught of the State S.C.S. offices; Odus Henson of the Clinton, S.C.S. office; Mr. and Mrs. L. L. Males of Cheyenne; Augusta, Howard and Helen Metcalfe of Roger Mills County, who accompanied the Paynes and the writer on a tour of the Upper Washita Project. Mrs. Augusta Metcalfe and her son, Howard had made the trip many years ago in a spring wagon to find the source of the Washita River. Her descriptions and stories of the earlier journey were most rewarding and helpful.)

¹⁴ *The Elk City Daily News*, Friday, June 7, 1963, p. 1; *The Cheyenne Star*, Thursday, August 28, 1963, p. 1.

over the country.¹⁴ The following excerpt is from a letter written by Mr. Males for R. C. Longmire, President of the Washita Flood Prevention Council:¹⁵

It grows more difficult each day to tell in a few words the economic benefits of the watershed program to our area. We haven't lost crop, bridge, road, farm improvements, or livestock since our project was installed. In fact, instead of losing crops and other property to floods with the sad economic effects this brings to people, we are now harvesting our own crops and spending the money ourselves. This can be seen in the new barns, new tractors and cars, and new homes on Barnett, Sandstone, Dead Indian, and other creeks. On one six-mile road out of Cheyenne, six farm families lived a few years ago with aggregate annual income of less than \$40,000. Today 14 families live out there and their aggregate annual income is over \$250,000. Five of these are father-son partnerships. Six use irrigation water, which helps stabilize the livestock industry for the whole area by furnishing a source of hay.

Another bonus benefit is recreation. Water based recreation is something we had never dreamed about in this dry area and now everybody goes in for it. All the farmers have boats, and all the bank clerks who can afford it have them. Almost any weekend at least a hundred cars will be parked around just two of these reservoirs. Near one of these lakes two country stores now prosper where only one could prosper before, and these two stores sell around a thousand out-of-state fishing licenses per year.

Our dream of an area with the hills in waving grass and the bottoms protected from floods and producing abundantly from intensified farming with a pool of beautiful sparkling water here and there is rapidly becoming a reality. What it does for people perhaps is the best measuring stick, and our people must be prospering because our bank total resources have gone from about \$100,000 at the low mark in the dry thirties up to nearly \$5,000,000 in December of 1963.

L. L. Males, Secretary
Washita Flood Prevention Council

In addition to its proximity to the famous Sandstone Creek Project, Cheyenne in Roger Mills County is the center of a region steeped in historical interest. This section of the state for many ages was part of the background against which moved a vast panorama of colorful and dramatic events.

Prehistoric people who lived in what is now Western Oklahoma, perhaps as long ago as 10,000 to 15,000 years, hunted animals now extinct, and lived in caves or holes under rock ledges. They probably journeyed out along streams, valleys and canyons where water, as well as abundant game and wild plants, were available.¹⁶

The Great Plains made for easy entry from the southwest and from the north. For thousands of years Indian tribes moved

¹⁴ "The Washita, Land Treatment and Flood Prevention," *loc. cit.*, 1961.

¹⁶ A. M. Gibson, "Prehistory in Oklahoma," *Chronicles of Oklahoma*, Spring, 1965.



(USDA-SCS Photo by Perryman, 1962)

YOUTH RANGE CAMP

Group planting near Dead Indian Lake, Upper Washita River.



(USDA-SCS Photo by Whittington, 1935)

EXAMINING HEIGHT OF GRAIN SORGHUM

This field irrigated from Sandstone Creek produced about 15 tons of feed per acre. Feed in same field not irrigated was not worth cutting.

across the area in seasonal migrations. Traveling on foot and taking with them their families, dogs, shelter, and such weapons and utensils as they possessed, many plains Indians regularly followed the bison herds northward and southward as they grazed on pasturage of natural grasses. During the 16th and 17th centuries, Spanish introduction of horses among these tribes increased their mobility and thus increased the frequency and extent of tribal raids.¹⁷

Spanish explorers in the sixteenth century, later French-Indian trappers and hunters, and still later, American explorers, trading expeditions, emigrants on the California Road were all visitors in this land.¹⁸ Indian tribes of the Plains knew foreigners trespassing on their land, wantonly destroying game, building forts, or farming settlements in the Indian country. They raided the intruders, and the intruders struck back with armies. From 1850 minor uprisings, wars, and treaties were followed by more disastrous wars. Finally the treaties of 1867 with the government were drawn up, and the Indian chiefs agreed to live within prescribed boundaries.¹⁹ In 1869 President Grant set the location of reservation boundaries for the southern Cheyenne and Arapaho in Western Oklahoma.²⁰

One impressive scene in this area is that of the Antelope Hills, thirty miles northwest of the county seat. These hills are made up of conspicuous irregular peaks that rise out of the plains and were once a landmark for the international boundary between the United States and Mexico.²¹ They were also a familiar sight to travelers along the California Road, first used in the spring of 1849 by gold-seekers under a military escort commanded by Captain R. B. Marcy.²²

According to Mr. Kent Ruth, "When white men first knew the Antelope Hills, the vicinity was the favorite home of the Comanches. Here they sought refuge following marauding forays into Texas and Mexico, and here should soldiers seek them, they were certain to be found in large numbers."²³ Just northwest of

¹⁷ Edwin C. McReynolds, *Oklahoma, A History of the Sooner State* (Norman: University of Oklahoma Press, 1954), pp. 13-17.

¹⁸ John W. Morris and Edwin C. McReynolds, *Historical Atlas of Oklahoma* (Norman: University of Oklahoma Press, 1965), Numbers 6 to 22.

¹⁹ Oliver LaFarge, *The American Indian* (New York: Golden Press, 1960), p. 140.

²⁰ Edwin C. McReynolds, *op. cit.*, p. 240.

²¹ Kent Ruth and Others, *Oklahoma, A Guide to the Sooner State* (Norman: University of Oklahoma Press), p. 458.

²² Oklahoma Historical Society, *Historical Marker at Junction of U.S. 283 and B.H. 47*.

²³ Kent Ruth, *op. cit.*, p. 459.

the Antelope Hills on Little Robe Creek is the site of a spectacular Comanche battle with Texas Rangers under Col. John S. Ford in 1858.¹⁴

Two miles west of Cheyenne a granite marker commemorates the Battle of the Washita. Here in the winter of 1868 Colonel George A. Custer led his cavalry from Fort Supply to the Washita River, and in the night closed in on three sides of Chief Black Kettle's encampment of Cheyennes. A few days before, Black Kettle had visited General William B. Hazen at Fort Cobb to ask protection for his tribe which had gone into winter camp on the Washita. On the morning of November 27 a heavy snow covered the ground. "Custer's troops swept into camp, killing men, women, and children. The camp was virtually annihilated." The Cheyenne's horses were gathered up and shot. Their equipment and provisions were burned.¹⁵

Black Kettle Museum in Cheyenne displays weapons, relics, and printed materials which interpret the historical significance of this event. Black Kettle District of the Panhandle National Grasslands was also named for this Cheyenne Indian chief. A tract of 30,826 acres acquired by the U. S. Department of Agriculture during the dust bowl days was later turned over to the U. S. Forest Service. Two Sections of these grasslands have been developed as recreational areas, Dead Indian Creek detention reservoir south of Holl, and Skipout Lake southeast of Reydon. Both have facilities for camping, swimming, boating, and fishing.¹⁶

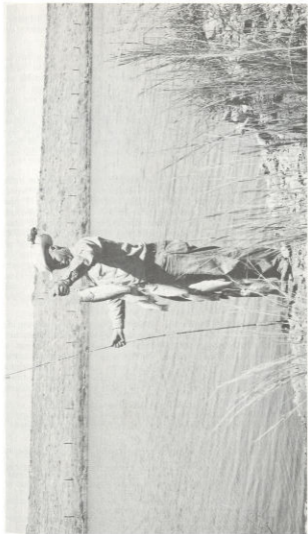
Settlers in this western country in the early 1890's remember hearing the distant beat of Indian drums along the Washita valley every night throughout the summer months and into the fall. At first they felt some uneasiness, but soon they realized these Indians were not hostile nor resentful of the intruders.¹⁷ There was no danger of war, for Wovoka had commanded peace, and these dances were expressions of faith in their prophet. Wovoka, a Paiute who had lived with a Mormon family far out west, told of a vision in which the Great Father promised that the white man would go away, and buffalo would again come back to the plains. Cheyennes and Arapshoes at this time were no longer hostile, but had been reluctant to take up the ways of the white man. They danced the Ghost Dance and sang the songs with ever-rising hope. However, belief in the new religion

14 "Antelope Hills, Landmark to Travelers a Century Ago," *The Daily Oklahoman*, April 23, 1929, p. 43.

15 John Clabes, "Custer Ambushed Cheyennes 90 Years Ago," *Oklahoma City Times*, November 27, 1958, p. 8.

16 "Battlefield Hunting Grounds," *Oklahoma Wildlife*, July-August, 1965, pp. 6-8.

17 "The Run in the Short Grass," *The Daily Oklahoman*, April 16, 1961, pp. 4-5.



(USDA-SCS Photo by Washington, 1955)

**A RANCHER OF ROGER MILLS COUNTY
String of fish caught out of one of the 24 detritum reservoirs on
Sandstone Creek Watershed, Upper Washita.**

was given up within a few years under great disappointment. Apiatan, a Kiowa, was sent to investigate the source of the doctrine and found it false.¹⁹

With the opening of the Cheyenne-Arapaho Reservation to white settlement, April 19, 1892, came the landseekers to build their soddies, dugouts, and picket houses. Augusta Metcalfe As a little girl came with her family to western Oklahoma from Kansas. She now lives on a ranch in the Washita valley, not far from the Antelope Hills. Mrs. Metcalfe is known as one of Oklahoma's leading artists and internationally known as a painter of western life. In oil paintings, watercolor, and ink sketches she has recorded this saga of the men and women who came to find homes at the time of the Cheyenne-Arapaho Run or in the years that followed.²⁰

Parts of this former Cheyenne-Arapaho land lay in the path of the Great Western Cattle Trail, where in 1877 an estimated 201,159 head were pushed up the trail to Dodge City, by Texas drivers.²¹ When the Reservation was thrown open to settlement by run on April 19, 1892, it was far from railroads and considered almost too arid for agriculture. Hence about 2,000,000 acres in the western half of the reservation remained in use of ranchmen for several years.²² Today ranching is still a profitable part of the agriculture industry of that country. Local interests and activities that reflect these influences include the annual rodeo, enjoyment of the square dance, the "Cowbelles" annual meeting in the home of Mrs. Daisy Dunn, and the Old Settlers' picnic at Grand.

Success of the Sandstone Creek Project has drawn world-wide attention to Western Oklahoma. Cheyenne's residents are accustomed to foreign visitors, and turbans no longer get a second look along main street. In the same week groups came from India and Indonesia. Visitors have included delegations from fifty foreign nations and all fifty states, United Nations tours, groups of overseas farmers, bus loads of bankers, farmers, and county agents.²³

¹⁹ Muriel H. Wright, *A Guide to the Indian Tribes of Oklahoma* (Norman: University of Oklahoma Press, 1965), p. 45.

²⁰ Melvin Herral, "My Life in the Indian Territory, the Story of Augusta C. Metcalfe," *The Chronicles of Oklahoma*, Vol. XXXIII (1965).

²¹ John W. Morris and Edwin C. McReynolds, *Historical Atlas of Oklahoma* (Norman: University of Oklahoma Press, 1965), number 40.

²² Edwin C. McReynolds, *Oklahoma, A History of the Sooner State* (Norman: University of Oklahoma Press, 1954), p. 289.

²³ Fred Grove, "Sandstone Creek, International Example," *Oklahoma Today*, Autumn 1964, p. 23.