

BOATING ON THE UPPER COLORADO
A HISTORY OF THE NAVIGATIONAL USE
OF THE GREEN, COLORADO AND SAN JUAN RIVERS
AND THEIR MAJOR TRIBUTARIES

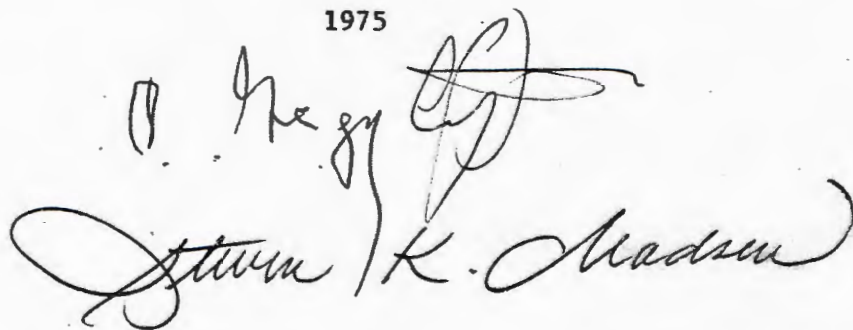
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1975

The image shows two handwritten signatures. The top signature is for C. Gregory Crampton, written in a cursive style. Below it is a signature for Steven K. Madsen, also in cursive, with a large, sweeping flourish at the end.

Submitted in partial fulfillment of Contract DACW05-75-C-0053,
U.S. Department of Army, Sacramento Corps of Engineers,
Sacramento, California, and the University of Utah, Salt Lake
City, Contractor.

PREFATORY NOTE

The following pages bring together for the first time the outline of what is known about navigation on the major waterways of the Upper Colorado River Basin. We have carried the story from the earliest known beginnings up to the present year. The gleanings from written records, both printed and manuscript, were supplemented by a large number of interviews of persons knowledgeable in the history of the subject. In some instances the information presented is based almost wholly on interviews.

The many institutions and persons who assisted the study are listed in the acknowledgements. The sources of information cited in the text will be found in a listing of persons interviewed followed by a bibliography of published and manuscript works, and a listing of newspapers.

C.G.C.

S.K.M.

December 30, 1975

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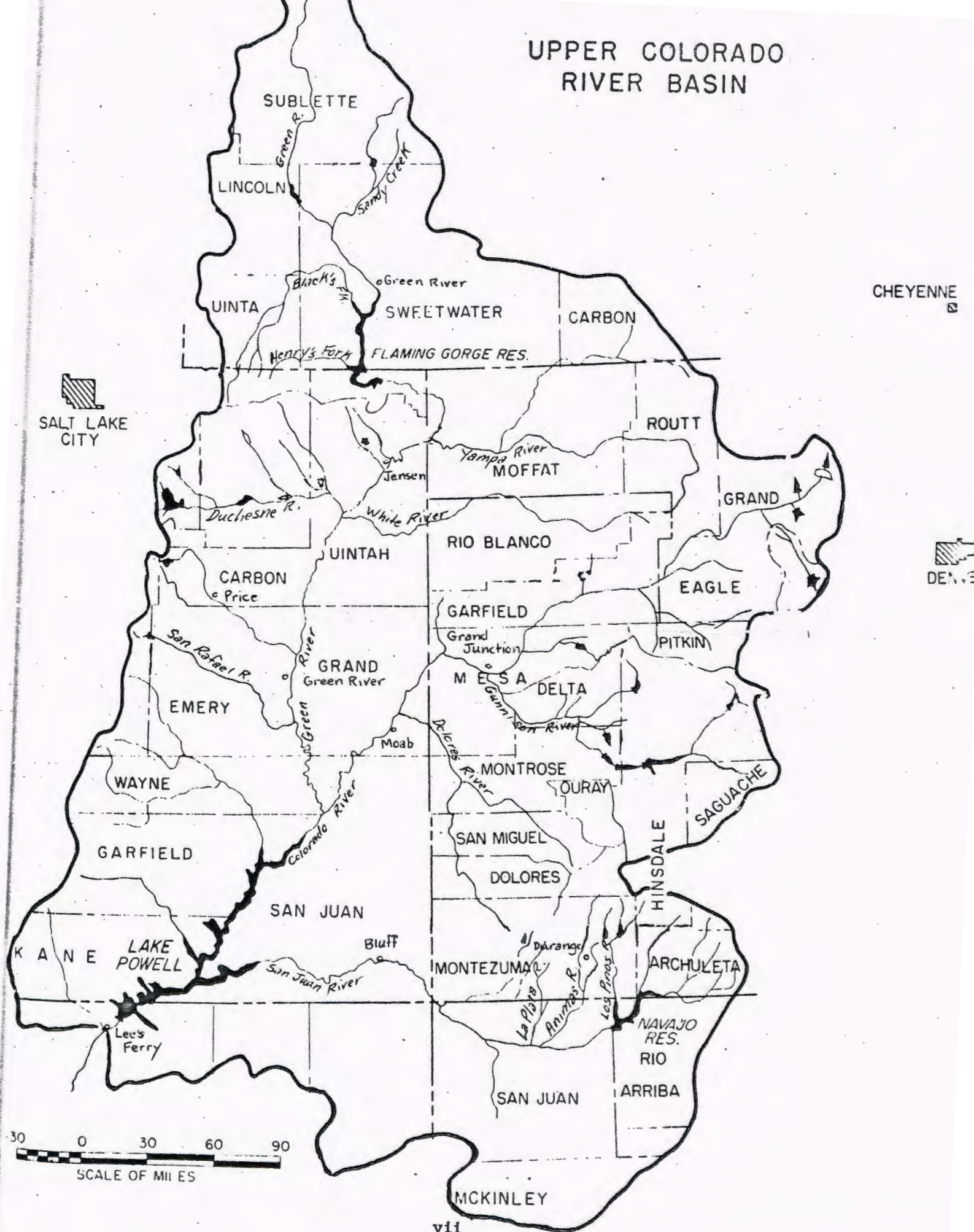
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UPPER COLORADO RIVER BASIN



HISTORICAL INTRODUCTION

Trending north and south on the Pacific side of the Rocky Mountains from northern Wyoming to the Gulf of California, the Colorado River has been involved closely with the history of the American West. And the river has been intimately identified with the history of the seven states -- Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada, California (and small parts of the Mexican states of Baja California and Sonora) -- parts of each of which collectively compose the huge basin of the Colorado. The basin constitutes close to nine per cent of the land surface of the continental United States. Geographical diversity is characteristic of the Colorado River basin. The river heads on peaks fourteen thousand feet or more in height, and in its long journey to the sea it drains forested slopes, sagebrush plains, sharp-edged plateaus, and low-lying deserts.

The Upper Colorado region comprises the drainage basin of the Colorado River above Lee's Ferry, Arizona, and includes parts of Arizona, Colorado, New Mexico, Utah and Wyoming. It encompasses an area of 113,496 square miles nearly two-thirds which is in public ownership (Upper Colorado Region State-Federal Inter-Agency Group, 1971).

Early History. The basin of the upper Colorado may boast of a history as diverse and interesting as its geographical environment. The Coronado expedition entered the Southwest in 1540, but it was some time after the colonization of New Mexico and the founding of Santa Fe in 1610 before Spanish penetration reached the upper basin. However, by 1776, when the Dominguez and Escalante expedition set out from Santa Fe to find a road to Monterey in California, the country as far north as the Colorado River (in Colorado) was known (Bolton, 1950). By then, Spain was familiar with and had named the San Juan, Los Pinos, Animas, and the Dolores Rivers as well as the La Sal, Abajo, and La Plata Mountains, and Mesa Verde. The main range of the Rockies forming the continental divide was called Sierra de las Grullas.

The exploring expedition led by the two Franciscans, friars Francisco Atanasio Dominguez and Silvestre Velez de Escalante, literally put the upper basin on the map. The party traversed western Colorado, crossing the Colorado River at a point about 35 miles above Grand Junction, Colorado. Pressing on the Spaniards crossed the Green River first above Highway 40 near Vernal, Utah (Crampton, 1952). The party passed through the Uinta Basin to enter the Great Basin at Utah Lake via Spanish Fork Canyon. The explorers, owing to the lateness of the season, did not make it through to California. From a point near Cedar City, Utah, they decided to return. Finding a crossing of the Colorado some distance above Lee's Ferry, they made their way back by way of the Hopi villages and Zuni. The diary maintained by Escalante

and the map made by Bernardo de Miera are two fundamental and primary documents for a study of the upper basin. H. E. Bolton has edited and annotated the diary under the title Pageant in the Wilderness (1950) and has reproduced in facsimile Miera's colored map. Although there are a number of errors on the Miera map, it is a remarkable portrayal, and it is the first to depict the entire basin of the upper Colorado on the basis of actual exploration. The Escalante diary and the Miera map also contain much ethnological and scientific information.

It should be noted in passing that the Dominguez-Escalante expedition forded the major streams of the Upper Colorado River Basin. No boats were used.

Owing to her involvement in the international swirl of events brought on by the American Revolution, Spain did not return to any further official exploration or settlement of the upper basin. And increasing hostility of the tribes peripheral to New Mexico prevented much commercial venturing beyond the limits of the narrow valley of the Rio Grande. However, owing to the remarkable campaigning and diplomacy of Juan Bautista de Anza, governor of New Mexico, 1777-1787, peace was restored to the northern frontier of New Mexico, and this opened the way for trade and enterprise between New Mexico and the upper basin of the Colorado (Thomas, 1932).

As the eighteenth century waned, Spain's days in North America were numbered, and with the successful completion of the wars for independence, which began in 1810, Mexico took over sovereign control of Spain's possessions in North America in 1821. The extreme northern boundary of Mexico (established by Spain and the United States in 1819) was fixed at forty-two degrees, and this extended from the continental divide west to the Pacific. Thus, with the exception of the northern part of the Green River (above 42°), the entire Colorado River basin fell to Mexico.

During the Mexican period, 1821-1848, there was considerable development of the upper basin, largely by Americans. Mexico relaxed the monopolistic controls of Spain and foreigners were now welcome. The wagon train commerce over the trail between the Missouri frontier of the United States and Santa Fe opened in 1822. At about the same time, American fur men began to roam through the wilds of the western slope of the Rocky Mountains after beaver. The fur men went everywhere they were likely to find good plews, and by 1848 they had become intimately familiar with the entire upper basin of the Colorado River which they mapped on a beaver skin (Cleland, 1952). The trappers ranged as far south as the Gila River, but the extent to which they penetrated the canyon country below the confluence of the Green and Colorado was minor. There is only small evidence to suggest that the trappers found their way into Cataract, Glen, and Grand Canyons.

Much of this activity in what is now Colorado and Utah was based in New Mexico at the towns of Santa Fe and Taos. Farther north, particularly in the Green River country, company enterprise, such as

the Rocky Mountain Fur Company founded in 1822, utilized the annual rendezvous to supply the trade. Favorite rendezvous points were at Henry's Fork and Ham's Fork, tributaries of the Green, and on the Green River near the present town of Daniel, Wyoming; and on Bear Lake astride the Idaho-Utah border in the Great Basin. Only a few fortified posts were built in the fur country -- Fort Uintah (or Wintey and other spellings) in Utah and Fort Bridger in Wyoming are noteworthy examples (Chittenden, 1902; Morgan, 1964).

The British fur brigades based in the Oregon country and in Canada did not penetrate into the upper basin of the Colorado, though Peter Skene Ogden made several trips into the Great Basin (Cline, 1963). A number of men with French names -- sons of the pioneers of New France -- showed up with the Americans as trappers in the Rocky Mountains, but very few of Spanish or Mexican ancestry were attracted to the business.

Beyond the fact that the fur men at times may have used primitive boats in the actual work of trapping, no evidence has been found to indicate that furs were transported to market by any of the waterways in the upper basin of the Colorado.

The New Mexicans were much more interested in the Indian trade than trapping, and from 1829 until the end of the Mexican period they opened and developed a caravan commerce between Santa Fe and San Gabriel in California. Rather than cross northern Arizona, dominated by hostile Apaches, the caravaneers worked out a trail across the Upper Colorado Basin. They followed the route opened by Dominguez and Escalante in 1776 to a point beyond Mesa Verde where they cut across lots to Moab on the Colorado. They reached the Green River where they forded that stream at the present site of Green River, Utah. From that point, they followed a course toward the southwest, passing through the northern tip of the San Rafael Swell and through Castle Valley. The trail left the Colorado Basin at Wasatch Pass and by way of the Sevier and Mojave rivers it eventually reached southern California. There were some variations in the route but they were minor.

Opened by New Mexicans, the Americans, as well as Ute Indians, soon got into the trade, and for nearly twenty years it was one of the most interesting trade routes in the West. The twelve hundred mile-long trail has been called the "Old Spanish Trail," though it was not in use until the region through which it passed had become part of Mexico. It always remained a trail and was not at anytime before 1848 a wagon road (Hafen and Hafen, 1954). All of the crossings of the streams of the Upper Colorado River Basin on the Old Spanish Trail were fords. The trail crossed the San Juan River near the head of the present Navajo Reservoir. The crossing of the Colorado was at Moab, Utah and that of the Green River at Green River, Utah.

Although the trappers and traders during the Mexican period literally opened the basin of the upper Colorado, they seldom broke into print; and the geographical knowledge they learned, together with that developed by Spain during the colonial period, remained unknown or unpublished. In the atlas accompanying his Political Essay on the

Kingdom of New Spain (1811), Alexander von Humboldt published an important map depicting the upper basin area as it was understood at that time. The geographical misconceptions (for example: The San Buenaventura River, which Humboldt identifies with the Sevier, is actually the Green River), a number of which may be traced back to the Dominguez and Escalante expedition of 1776, were corrected by the fur men, but it was not until the appearance of the official explorers before they were published to the world (Crampton, 1964; Crampton and Griffen, 1956).

John Charles Fremont's contributions are important here. He entered or crossed the upper basin on his first, second, third, and fifth expeditions, 1842-1853, and the maps he produced, particularly those drawn by Charles Preuss, accurately portrayed the road to Oregon, the Great Basin (which he named and identified), and the upper basin of the Colorado. Though his mapping of the Colorado Basin was less detailed than the first two areas, he did eliminate the errors of the earlier period, and his reports of the first three expeditions, all published before 1849, did much to attract attention to the West as his maps pointed the possible routes thither (Jackson and Spence, eds., 1970; Nevins and Morgan, eds., 1964; Dellenbaugh, 1914).

From the gold rush to the coming of the railroad. The acquisition by the United States from Mexico in 1848 of the huge area from the Rockies to the Pacific was immediately followed by the gold rush to California, a movement that lasted for ten years. Some years before, Americans in large numbers had moved to the Oregon country and opened a two thousand-mile wagon road from the Missouri River to the Willamette. The road followed tracks laid down by the trappers of an earlier day and by emigrants who traveled by horseback to Oregon in the 1830's. Justly famous in the history of the American movement West, the Oregon Trail entered the upper basin of the Colorado at South Pass and turned southwest. Travelers crossed the Green by a ford at or near the mouth of the Sandy and then moved on to Fort Bridger, founded in 1843. From Bridger, the Oregon route turned northwest and by a low divide reached the Bear River Valley, a Great Basin stream. The road continued on from there to Fort Hall and the Oregon country. Through the Green River basin there were several cut-offs and short-cuts on the Oregon Trail (U.S., WPA, 1939).

The Oregon Trail across the valley of the Green River also served as a road for successive waves of people moving to other parts of the West. The vanguard of the Mormons followed the route in 1847 and from Fort Bridger followed a track to Salt Lake Valley made by the Donner Party the year before. Overland rushers to the California gold fields followed either the Mormon route to Salt Lake or the older road to Fort Hall on the Snake, and from both of these places there were alternate routes leading to California by way of the Humboldt (Korns, 1951). Although most emigrants forded the Green River, or ferried their own wagons and swam the stock, a few commercial ferries were established on the Green to serve the 49ers and later travelers (Gowans and Campbell, 1975. See the section on Green River Ferries below). At least one

California-bound party tried to navigate the Green as a quick way to reach the golden shores (see Green River, 1849, William Lewis Manly). Very few persons going to California used the Old Spanish Trail (Vinton, ed., 1930), though rushers in substantial numbers traveled a southern route through Arizona opened by military campaigners during the war with Mexico.

The great influx of people to California after 1848 greatly accelerated the development of the West and accentuated the need for rapid communication between the settled frontier, which had moved not far beyond the Mississippi River, and the Pacific coast. During the twenty years from 1849 to 1869, there was much planning and exploring for routes across the continent to serve these needs. The Army Topographical Engineers in the early 1850's sought railroad routes (Albright, 1921). Gunnison and Fremont (in a private capacity), both in 1853, surveyed a route across the upper basin which passed through south central Colorado to the Gunnison River and thence across Utah paralleling the Old Spanish Trail. Additional units of the Topographical Engineers, beginning with Stansbury in 1849, surveyed road locations which crossed the basin close or parallel to the older Oregon and Mormon trails (Goetzmann, 1959), and in this area the Department of Interior also engaged in road survey, and in road construction (Jackson, 1952, 191-217).

From a reading of their reports and from study of the two scholarly works (Jackson, 1952; Goetzmann, 1959) covering the subject, it appears that the government surveyors and road builders before 1869 gave little thought to the idea that the streams of the Upper Colorado River Basin might be utilized to serve the needs of transportation and commerce. The exception was Captain R. B. Marcy, U.S.A., who in 1853 proposed that the Green and Colorado rivers be tested to determine navigability. His proposal was rejected (Crampton, 1972, 95-96). During the Utah War, 1857-1859, the Army did consider the possibility of using the Green and Colorado as military routes. For the Topographical Engineers Captain John N. Macomb in 1859 explored the area near the confluence of the Green and Colorado without reaching either stream. The year before the Engineers' Lieutenant Joseph C. Ives, proved the navigability of the lower Colorado by steaming up to Black Canyon in the Explorer (Crampton, 1964, 59-64; Crampton, 1972, 95-100). But these ventures ended the government's interest in the matter for at least ten years.

Before the coming of the railroad, the overland stage, the pony express, and the magnetic telegraph all crossed the basin of the upper Colorado closely following the older wagon routes from South Pass and Fort Bridger to Salt Lake City. The Central Pacific Railroad, built across the basin in 1868 and 1869, followed much the same route, though it crossed the continental divide south of South Pass and it reached the valley of the Great Salt Lake by way of Weber Canyon (Griswold, 1962; Athearn, 1971).

The meeting of the Central Pacific and the Union Pacific at Promontory in 1869 was the culminating point in the history of the quest for an efficient route to connect the two oceans across the United States. At the same time, the transcontinental railroad was instrumental in fostering development of the region through which it passed (Winther, 1964). By 1869, most of the West was well known to the white men and awaited development by them. But not all of it was known.

John Wesley Powell, the Great Surveys, and Robert B. Stanton. The great map of the West prepared by Lt. G. K. Warren in 1857 (Warren, 1861) portrayed the region essentially as it is known today. There were only a few blank spots. One of the largest of these was the canyon and plateau wilderness of the upper Colorado -- the region below the Moab and Green River crossings on the Colorado and the Green and extending downstream to include the Grand Canyon country. The basin above these points was mapped accurately and in detail.

Even before the two railroads met, the one-armed, Civil War veteran, Major John Wesley Powell, set out to fill in the blanks on the map in the region of the Colorado. In 1869, Powell made the first traverse of the great canyons of the Colorado from the Central Pacific Railroad crossing of the Green River in Wyoming to the foot of Grand Canyon (Powell, 1875). Two years before that Clarence King was placed in charge of a survey called the Geological Exploration of the Fortieth Parallel; and F. V. Hayden inaugurated a survey known as the Geological and Geographical Survey of the Territories; in 1868, Lt. George M. Wheeler, Corps of Engineers, was placed in charge of the Army's Geographical Surveys West of the One Hundredth Meridian. After his voyage through the canyons of the Colorado, Powell was placed in charge of still another survey known officially as the Geographical and Geological Survey of the Rocky Mountain Region. These four great public surveys, coming under the jurisdiction of various agencies of the War and Interior Departments and the Smithsonian Institution, surveyed and mapped and studied scientifically much of the basin of the Colorado River. King surveyed a broad band along the fortieth parallel. Hayden covered some of the region north of this including the Yellowstone area as well as the entire state of Colorado. Powell studied the area south of the region covered by the King survey but restricted his activity largely to the western side of the Colorado including the High Plateaus of Utah and the North Rim of the Grand Canyon. Wheeler mapped the region west of the Powell survey in Utah and south of it in Arizona; he included portions of northwestern New Mexico as well. In 1879, the four surveys were consolidated to form the U.S. Geological Survey. Clarence King, the first director, was succeeded by John W. Powell in 1881.

The reports, atlases, maps, and scientific papers published by these surveys constitute a great body of geological, ethnological, geographical, and biological literature on the upper basin of the Colorado which did much to attract public attention to the region and much of it is of value today (Bartlett, 1962). The publications listed by Schmeckebier (1904) run to dozens of titles. Wheeler's final Report (1889), which contains an excellent summary of the exploration of

western North America from 1500 to 1880, was the last of the major publications emanating from these surveys. It is evident from a perusal of the reports and papers of these four government surveys that as of about 1880 little use had been made of the rivers of the Upper Colorado River for the purposes of navigation. Writing of the West at large, Wheeler (1889, 192) summed it up this way: "Relatively water-ways are but a small factor in the element of communication as a whole. Railroads have already and will in an increasing ratio assist industry in the development of surface and hidden value."

Of course, John Wesley Powell on two separate voyages, 1869 and 1871, from Green River, Wyoming, had run the Green and the Colorado twice but neither Powell nor his contemporaries were willing to argue that these rivers were suitable for commercial navigation. In fact, Captain George M. Wheeler, Corps of Engineers, who in 1871 had boated up the Colorado River through the lower part of Grand Canyon, wrote in his final Report (1889, 170) that "the furthest practical head of improved navigation must remain permanently at the foot of Grand Canon."

Indeed, Powell's reporting (1875, 1895. See the many references on J. W. Powell in Crampton, 1972, 239-241) of his river trips, which tended to emphasize the hardships and difficulties of navigation, discouraged any attempts to follow him through the canyons until 1889, when Robert B. Stanton undertook his railroad survey. In the 1880's the railroad fever was at its height. Competing lines were building across mountain ranges and deserts to reach the Pacific and the markets en route and beyond. Why not construct a line along the Colorado River which on the map appeared to offer the easiest grade west from the Continental Divide? The idea appealed to Frank M. Brown of Denver, a promoter eager to get into railroads. Brown read the reports of Ives and Powell and talked in Washington with Powell who pronounced the scheme as "quite impracticable." Undaunted Brown organized the Denver, Colorado Canyon and Pacific Railroad Company and in 1889 employed the noted engineer Robert Brewster Stanton to make an instrumental survey for a railroad through the canyons of the Colorado River from Grand Junction, Colorado, to the Gulf of California.

In what is one of the most notable chapters of Colorado River history, Robert B. Stanton actually completed the instrumental survey during the years 1889 and 1890. Men, including Frank Brown, were lost to the river. Despite the odds, the engineer found a route over which -- or so he argued -- rails could be laid all the way through the great canyons below Grand Junction! But no backers were found for the line. Stanton was the first after Powell to navigate the entire line of canyons below Green River, Utah, and his success in doing so helped stimulate prospecting in the canyons and navigation of the waterways (On Stanton and the railroad survey see Smith, 1960 and 1965, and Crampton, 1964 and 1972).

Permanent Settlement and Economic Development. By 1879, when the great public western surveys were consolidated to form the U.S. Geological Survey, the permanent settlement of the Upper Colorado River Basin had preceeded from several fronts. A few towns -- Rock Springs, Green River -- sprang up along the Union Pacific as it was built through Wyoming, and these soon became transfer points, freight-ing terminals, and centers for the industrial and economic development for the hinterland for hundreds of miles north and south of the railroad. The railroad was a boon to farmers, and especially stockmen, and to miners of the non-precious metals. Coal mining, particularly, was developed along the line of the Union Pacific at places like Kemmerer, Wyoming.

The quest for precious metals did much to bring a permanent population to the basin, particularly into the Colorado area. Once the California gold rush had spent itself (by 1858 when the placers were playing out), prospectors began to fan out over the intermountain West. In 1859, important strikes were made at Virginia City, Nevada, and Denver, Colorado, and huge rushes of gold seekers reached these places shortly thereafter. From these two poles, a series of strikes and rushes in other places soon brought gold and silver seekers into every stream and range in the Rockies. Most of the enduring camps within the Colorado Basin were found in the mountains of Colorado. The massive pile of the San Juan Mountains, dominating southwestern Colorado, was perhaps the most productive precious metal area in the entire basin. Opened in the 1870's, Silverton, Ouray, Telluride, Animas City, and other camps quickly sprang up in the San Juan Mountains. There were scattered mining camps elsewhere, such as Aspen, opened about the same time, but the mines in the San Juan Mountains were the most productive (Henderson, 1926).

Although the gold and silver miners were mercurial and moved about, some of the mining camps, like those mentioned above, were permanent and large enough to attract industries and businesses incidental to mining -- roads, communications, railroads, farming, stock-raising -- and some of these at least outdistanced in dollar return the product of the mines. The mining towns had to be fed and serviced with communications. The building of roads and railroads to reach the mines fostered agricultural and grazing development along these routes, and these industries remained permanent when the mines faded. New extractive industries -- particularly coal mining -- flourished along the tracks.

Thus throughout the mountains of Colorado, there was a time of feverish railroad building, particularly during the last quarter of the nineteenth century. Ormes (1963) lists the names and discusses the history (many were paper lines) of well over three hundred railroads in or near Colorado. Historically, the most important of the Colorado lines (perhaps) was the Denver and Rio Grande Western. The brain child of William J. Palmer, this railroad tackled the difficult problem of railroad building in the Rockies, captured most of the

business of the Western Slope, and in 1882 completed a line to Utah. This was eventually extended (by the Western Pacific) to the Pacific Coast, and thus a second transcontinental line crossed the upper basin (Athearn, 1962).

Towns built along the railroads in Colorado and Utah, which were adjacent to areas where agriculture was possible or which served as distribution points for mining camps and ranches, became the larger and more prominent and permanent places. Durango, Gunnison, Montrose, Grand Junction, in Colorado, and Price, in Utah, are examples. The pattern of urban development, as laid down in the upper basin by the railroads, has changed very little in the twentieth century.

In Utah and in the states adjacent to Utah excepting Colorado, colonization by the Mormons -- members of the Church of Jesus Christ of Latter-day Saints -- accounts for a significant amount of permanent settlement in the basin. Once established on the shores of Salt Lake in 1847, the Mormons soon began to spread out through the valleys of the Rocky Mountains literally in all directions. By the time of Brigham Young's death in 1877, about 350 colonies had been established in Utah and beyond that, mainly in Idaho and in northern Arizona. The significant settlements in Arizona were for the most part located in the valley of the little Colorado in the lower basin (Hunter, 1945).

Shortly after Young's death, successful pioneer colonies were established by the Mormons along the eastern slopes of the High Plateaus from Castle Valley on the north, south to the Paria River; but the population of these places has always remained very small (Jenson, 1941). The spectacular Hole-in-the-Rock expedition in 1879 resulted in the colonization by the Mormons of San Juan County in southeastern Utah (Miller, 1959). Lee's Ferry on the Colorado at the mouth of the Paria River was established by the Mormon John D. Lee as a ferry in 1873. Over the route passed most of those Mormons who colonized Arizona (Peterson, 1973).

The coming of the railroad and the approach of miners, farmers, and stockmen disturbed the Indians, who were forced to accept change and restriction to reserved areas. Within the upper basin, the most dramatic and severe removal was imposed upon the Utes, who were forced out of Colorado in the face of white pressure first exerted by the miners. In a series of treaties (1868, 1873, etc.), the Utes gave up more and more land, and in 1881 the large majority were removed to the Uintah-Ouray reservation in northeastern Utah (Emmitt, 1954). The southern bands of Utes were allowed to remain but were confined to a long, narrow, and unproductive reservation in the extreme southwestern part of Colorado. The Utes' neighbors, the Navajos, have fared better. Many of them were removed in 1864. But four years later they were permitted to return and since that time the Navajos have managed to expand their reservations, and it is today the largest Indian reserve in the United States. Indeed the tribe itself, with

a population of perhaps 90,000 is the largest in the United States. In the Green River basin in Wyoming the Shoshonean speaking Indians were gathered on to reservations outside the basin.

The pioneer approaches to the basin of the upper Colorado do not fall into any easy pattern suggested by the findings of some frontier historians. Billington (1966) reviews the work of Turner and the development of frontier theory since, but it is apparent that the peculiar conditions found in the Rocky Mountain West do not lend themselves to easy generalization and scholarly titles in the field are few. This is certainly true when it comes to the Colorado River basin. If Frederick Jackson Turner's conclusion that the frontier came to an end about 1890 is inapplicable to the Rocky Mountain West, it is probably true that the pioneer period came to an end about that time. The pattern of future development had been set by then.

The dates when the states of the upper basin were admitted to statehood reflect historical developments taking place mainly outside of the basin itself and do not reflect accurately the termination of the pioneer period within the basin. Statehood dates for the five states are: Colorado (1876); Wyoming (1890); Utah (1896); Arizona and New Mexico (1912).

From beginnings made during the pioneer period, several industries have emerged to dominate the economy of the upper basin. Stock raising was one of them, and it is today one of universal interest throughout the basin. Farming constitutes an important pursuit within the upper basin, but in much of the region geographical conditions do not permit an extensive agriculture. The valleys of the Western Slope of Colorado and of adjacent regions along the San Juan River in northwestern New Mexico constitute the larger and most productive agricultural areas, notably so, of course, where reclamation projects have made possible the irrigation of extensive acreage.

As the farmers, ranchers, miners, and railroad builders moved into Upper Colorado River country, the lumber industry was developed, and from these beginnings it grew to one of substantial stature as population increased in neighboring regions. The largest forested areas containing marketable timber are located in the upper reaches of the basin in Colorado and Wyoming. Mining (for gold and silver), so important in hastening the pioneer development of the basin, has been unsteady and erratic as mining is, generally speaking. Depletion of profitable minerals, of course, accounts for this, but price fluctuations and temporary markets have had their effect. A good illustration of the latter is found in the history of the extraction of radioactive minerals.

The major source of radioactive minerals in the United States is the Colorado Plateau, and the history of the mining of these ores is associated with that of gold and copper. The search for gold led to the initial discovery of carnotite of Rock Creek on the western slope of the La Sal Mountains in 1898, and this marks the beginning of the

first of three stages in the history of the extraction of these ores. The first is identified with the mining of radium which reflected scientific development in the use of luminous materials and advances in medical research. This reached a peak during World War I, but fell off to nothing in 1924 when foreign production undercut the American market. The second stage began about 1936 and focused on vanadium, needed as a steel alloy, and rose in intensity as the world plunged into war. The third, the uranium stage, did not begin until after World War II when the Atomic Energy Commission set up a purchase and exploratory program in response to the need for a stockpile of fissionable minerals. The uranium rush enveloped the entire Colorado Plateau and brought more activity to that portion of the Upper Colorado River Basin below the Uinta Mountains than any other prior event. Often uranium ores were found in association with unprofitable copper deposits discovered in earlier years (Crampton, 1964; Look, 1956). Today, in 1975, with the price of fissionable ores higher than ever, many of the older mines, once unprofitable to work, are being operated again.

The phenomenal growth in American manufacturing after the turn of the century, when the new automobile industry was developing, greatly expanded prospecting for the industrial metals in the Colorado River basin. Coal mining, which developed along the lines of the railroads (and indeed it was instrumental in attracting spur and branch line tracks to the deposits) notably in western Colorado and eastern Utah, constituted the first boom in industrial mining. By the opening of World War I in 1914, important producing oil wells had been developed in the Upper Colorado River Basin in all of the states save New Mexico (Bacon and others, 1916), which, however, has since become an important producer in the San Juan oil field. Extractive mining generally has supplied industries located outside of the basin, and industrial progress within it has been slow compared to more populous regions (Upper Colorado Region State-Federal Inter-Agency Group, 1971).

Now, and in the years ahead the prospects for industrial development in the Upper Colorado River Basin are very great indeed. The existence of enormous deposits of oil shale and coal in Utah, Colorado and Wyoming, and the high national demand for energy, guarantees that the basin in the mineralized areas will witness development on a scale unknown in the past.

Intensive prospecting for industrial minerals in the basin has led to certain legal disputes between the federal and state governments over the ownership of the beds of rivers. By law ownership of a river bed is vested in the state if at the date of admission to the union the river in question was a navigable stream. Otherwise, title to the river bed is vested in the United States. The disputes arose over the matter of granting mineral leases on public lands. Since navigability was the determinant, important evidence on the matter was collected in these cases, and judicial decisions were made in definition of navigability of long sections of both the Colorado and Green rivers and certain tributaries in the upper basin. These cases will be discussed below under the heading "Court Decisions Relating to Navigability."

During the course of the opening and development of the upper Colorado River country we find that the basin's rivers were used to a limited extent as commercial waterways. Topography of course dictated this result. It was easier to build railroads, and roads, at least for the long haul. Here and there the rivers were used (and the record of that usage will be found in the pages to follow) where the laying of rails and the building of roads was inefficient and uneconomical.

Recreational Boating. The longest chapter in the navigational history of the rivers of the upper Colorado will be taken up with recreational boating, a concomitant of the growth of tourism. The beginnings of federal reclamation, which date from the Newlands Act of 1902, and which passed an important milestone when the Colorado River Compact was signed in 1922, attracted popular attention to the rivers of the upper basin. Popular interest was intensified by the creation of public reservations preserving historic ruins and scenic areas in accordance with the American Antiquities Act of 1906. Ten years later in 1916 when Congress created the National Park Service, there were a number of national parks and monuments already in existence within the upper basin (Mesa Verde, Chaco Canyon, Natural Bridges, Rainbow Bridge, etc.). Reservations subsequently established (Bryce, Canyonlands, Dinosaur, Glen Canyon National Recreation Area, etc.) helped to advertise the scenic treasures of the vast upper basin and its wild rivers (Crampton, 1964, 1972).

We might note here that up to 1921 the name "Grand" designated the present Colorado River above its confluence with the Green. Feeling that it had a proprietary right to the name, the Colorado Legislature in 1921 changed the name from Grand to Colorado; the Congress of the United States went along with the idea and wrote it into federal law, July 25, 1921. This has created some confusion since documents and sources predating 1921 refer to the stream as the "Grand River." In this report, except where quotations are cited, we have avoided use of the older name.

Recreational use of the rivers which had just begun before 1922, when the Colorado River Compact was signed, grew slowly before World War II, but it has steadily increased since. Today, boating on the rivers of the upper Colorado, must account for some portion of every tourist dollar spent in the region. However, no figures have been found to give us the actual percentage. River running, which is mainly conducted by commercial operators, is for the most part confined to the main waterways: The Colorado from Westwater Canyon to Lake Powell, in Colorado and Utah; the Green from the Gates of Lodore to the confluence with the Colorado, in Colorado and Utah; the Yampa River to its confluence with the Green, in Colorado and Utah; the San Juan River in Utah. Tour operators are subject to regulation by either the Bureau of Land Management or by the National Park Service. Both agencies set quotas limiting recreational use of the rivers.

According to some tour operators interviewed (Williams, 1975; May, 1975; McClatchy, 1975), few local people are signed up for the river trips; most of them come from the eastern states and from California. Furthermore, numbers of the commercial outfitters are based in states outside the upper basin.

A chronological summary of navigational usage of the rivers of the upper basin will be found after the following discussion of court decisions relating to their navigability.

In addition to the works cited above and elsewhere in this report, several authors have written histories of the Colorado River (and they usually include the Green). Dellenbaugh (1902), Freeman (1923) and Waters (1946) top the list.

COURT DECISIONS RELATING TO NAVIGABILITY

Cases relating to the navigability of the waterways of the Upper Colorado River Basin have produced an extensive archive of evidence important for any study of navigational use of the rivers and the decisions in these cases have determined the navigability, or non-navigability, of sections of some of the rivers within the State of Utah.

At the outset it should be noted that the issue in these cases revolved around the single question: Were the rivers in dispute navigable within the state on January 4, 1896, when Utah was admitted to the union? If they were, the river beds belonged to the state, if not they belonged to the United States. There was no question whether the rivers were navigable waters of the United States and there was no question as to navigation or capability of navigation in interstate commerce (U.S. v. Utah, 283, U.S. 64, [1931], Report of Special Master [1930, 8-9] in the foregoing case).

United States v. Utah (1931). This case, United States v. Utah, Supreme Court, October term, 1930, No. 14, original, was decided on April 13, 1931, and was reported in 283 U.S. 64, 51 S. Ct. 438, 75 L. Ed. 844. This is the "River Bed Case" well-known in Utah's legal history. The suit was commenced in 1928 when the United States before the Supreme Court filed a bill of complaint to quiet title to certain portions of the beds of the Green, Colorado and San Juan rivers. The court appointed a special master, Charles Warren, to take evidence and report his findings of fact, conclusions and recommendations. Warren filed his report on November 3, 1930; the case was decided on April 13, and a decree entered May 18, 1931 (283 U.S. 801).

The court decreed that on and after January 4, 1896, the following sections of the Colorado River were navigable:

The official language reads as follows: "The Bill of Complaint, in so far as it relates to the Grand (Colorado) River, is dismissed. The Grand (Colorado) River, from a point located at the mouth of Castle Creek to the confluence of the Grand (Colorado) River with the Green River, is now and at all times on and after January 4, 1896, has been, a navigable stream . . ."

"The Bill of Complaint, so far as it relates to the Colorado River, from the confluence of the Green River and the Grand (Colorado) River to Mile 212.15 above Lees Ferry, Arizona, and from Mile 176 above Lees Ferry, Arizona, to the Utah-Arizona Boundary Line, is dismissed. Said stretches of said river and each of them are now and at all times on and after January 4, 1896, have been navigable. . ."

In summary this means that the Colorado River is navigable from the mouth of Castle Creek (14 river miles above Moab, Utah) to a point about 4.5 miles below the confluence of the Green River, and from the foot of Cataract Canyon (176 river miles above Lee's Ferry, Arizona) to the Utah-Arizona line (about 28 miles above Lee's Ferry). The total navigable river miles here is about 230.5 but it should be pointed out that the section between the foot of Cataract Canyon and the Utah-Arizona line (which included most of Glen Canyon) is now totally inundated by Lake Powell.

The court further decreed that most of the Cataract Canyon section of the Colorado is not navigable. The official language reads: "The Colorado River from Mile 212.5 above Lee's Ferry, Arizona, to Mile 176 above Lee's Ferry, Arizona, is not a navigable river . . ."

In summary this means that Cataract Canyon is not navigable from a point about 4.5 miles below the mouth of the Green River to the foot of the canyon at Mille Crag Bend, a distance of about 36.15 miles. It should be pointed out that at full pool Lake Powell will inundate the river in the lower part of Cataract for a distance of about 24 miles. Thus, the distance that now may be regarded as non-navigable is about 12 miles.

In the case of U.S. v. Utah (1931) the Supreme Court further decreed that the lower section of the Green River is a navigable stream. The official language reads: "The Bill of Complaint, in so far as it relates to the Green River, is dismissed. The Green River, from a point where the river crosses the township line between townships 23 and 24 South, Range 17 East, Salt Lake Base and Meridian, to the confluence of the Grand (Colorado) River, is now and at all times on and after January 4, 1896, has been, a navigable river . . ."

This means that the lower 95.25 miles of Green River -- from a point 1.75 miles below the mouth of the San Rafael River to its confluence with the Colorado -- is navigable.

In U.S. v. Utah (1931) the court further decreed that the San Juan River below Chinle Creek, a distance of about 133 miles, is not navigable. The official language reads: "The San Juan River, from the mouth of Chinle Creek to the confluence of the San Juan and Colorado Rivers, is not a navigable river . . ."

At full pool the lower 70 miles of the San Juan River is inundated by Lake Powell, leaving 63 miles of this section of the river that may now be regarded as non-navigable.

As noted above the testimony taken in the case of U.S. v. Utah (1931) constitutes an important body of information about the navigation of the rivers in question as well as reaches of the rivers beyond the sections under litigation and we have used this material extensively in the preparation of this report. Approximately 6000 pages of testimony was taken from about 170 witnesses and 638 exhibits were submitted in the case. The original typescript of the testimony

is now in the National Archives, Washington, D.C., together with many of the exhibits. Microfilm copies of this same material will be found in the Utah State Archives, State Capitol Building, Salt Lake City.

In this report citations to the testimony of witnesses in this case will read: Record followed by page number and preceded by the title of the case. This form is used in the two publications listed below and in the several briefs filed in the case.

In U.S. v. Utah (1931) the Report of the Special Master Charles Warren is an excellent summary of navigation in the upper basin. His treatise is much broader than the area covered by the sections of the rivers under suit. A printed Abstract in Narrative Form of the Testimony Taken before the Special Master (1931) in two volumes, is a convenient summary of the mass of testimony.

United States v. Utah (1960). This case, bearing the title United States v. State of Utah, George D. Fehr, Earl E. Fehr, Joe Lyon, Jr., United States Minerals Company, was heard in the United States District Court of the District of Utah, Central Division, and decided on December 14, 1960 and a decree was issued on the same date. The case, bearing the court's number C-137-59, was not reported. The suit was brought by the United States to quiet title to the bed of the San Juan River from the boundary between Colorado and Utah downstream to the mouth of Chinle Creek, a distance of approximately 55 miles. After hearing extensive testimony the court ruled that this section of the river was not navigable on January 4, 1896, when Utah was admitted to the Union.

The defendants appealed in the United States Court of Appeals for the Tenth Circuit, Case No. 6677. The decision of the lower court was upheld, May 10, 1962, 304 F. 2nd 23 (1962). Petition for certiorari denied 371 U.S. 826, October 8, 1962.

Thus, as a result of the judgement in this case, together with that in the earlier United States v. Utah (1931) (see above), the San Juan River throughout its course in Utah was judicially determined to be non-navigable.

The testimony of witnesses in the case of U.S. v. Utah (1960) constitutes an important body of information about the navigation of the San Juan River both within and beyond the sections under litigation. The original transcript of testimony is in the Federal Record Center, Denver, according to the Clerk of Court, Salt Lake City. A copy is in the Office of the United States Attorney, Salt Lake City. A complete Resume of Testimony, copy in the Office of the U.S. Attorney, Salt Lake City, was made available to us and we have used it extensively in the preparation of this report; Citations read U.S. v. Utah (1960), Resume, page.

In their appeal to the U.S. Court of Appeals for the Tenth Circuit, State of Utah, et al. v. United States, case No. 6677, the appellants

filed a printed Brief which contains much historical information on San Juan River navigation.

United States v. Utah (1965). This case entitled as above, was initiated by the United States in 1962 to quiet title to sections of the Green River bed in Utah, and to the beds of the White and Duchesne rivers in Utah. The case was docketed, No. C-201-62, in the United States District Court for the District of Utah, Central Division. Both litigants engaged competent historians to prepare scholarly studies of navigational history (See Brooks [1963] and Marston [1962, 1963?] below) and witnesses were sought out. But no witnesses were heard. The parties agreed to settle the case by stipulation and judgement was entered by the court on January 8, 1965. The judgement was not reported but it is on file in the Clerk's Office, U.S. District Court, Salt Lake City.

In U. S. v. Utah (1965) the court decreed that the following sections of the Green River are navigable: The official language reads: "All of said Green River from said point at the mouth of Sand Wash Creek to a point which is 312 miles above the confluence of the Green and Colorado Rivers and 195 miles above the railroad bridge at Green River, Utah, is navigable in fact and within the legal meaning and definition of said term."

All of the Green River in the State of Utah from the point where said river crosses the line between Townships 23 and 24 South, Range 17 East, Salt Lake Base and Meridian to a point which is immediately below what is known as Mile 12 Rapid (which point is 129 miles above the confluence of the Green and Colorado Rivers and 12 miles above the railroad bridge at Green River, Utah) is navigable in fact and within the legal meaning and definition of said term."

In summary these two paragraphs constitute a judicial determination that the Green River is a navigable stream from a point near the foot of Split Mountain Canyon (Dinosaur National Monument), 13 river miles above Jensen to the mouth of Sand Wash, 100 miles downstream. And further that the Green is navigable from a point above the railroad bridge at Green River, Utah, downstream for a distance of about 37.5 miles to the point identical with the upstream limit of navigability determined by the earlier river bed case, U.S. v. Utah (1931).

It was further determined in U.S. v. Utah (1965) that two sections of the Green River are non-navigable.

The official text of the judgement reads: "All of said Green River lying within the State of Utah and above said Mile 312 above the confluence of the Green and Colorado Rivers is non-navigable in fact and within the legal meaning and definition of said term." And further: "All of said Green River between said Mile 12 and a point which is known as the mouth of Sand Wash Creek (which point is 212.7 miles above the confluence of the Green and Colorado Rivers and 95.7 miles above the

railroad bridge at Green River, Utah) is non-navigable in fact and within the legal meaning and definition of said term."

In summary this means that the Green River in Utah from the point where it enters the state now covered by Flaming Gorge Reservoir, to the point near where it emerges from Split Mountain Canyon is not navigable. The section of the Green flowing through Colorado in Lodore Canyon, between these two points was not an issue in this case.

Furthermore, the court determined that the Green from the mouth of Sand Wash to a point 12 miles above the railroad bridge at Green River, Utah, is not a navigable stream. This section, which coincides with Desolation and Gray canyons, is about 84 river miles long.

It was further decreed in this case that (quoting): "The Duchesne River and all of its tributaries in the counties of Duchesne, Uintah and Wasatch, State of Utah, and the White River and all of its tributaries in Uintah County, State of Utah, are non-navigable in fact and within the legal meaning and definition of said term."

As noted above, historical research undertaken in this case provided important documents for a study of Green River navigation and we have used them extensively. For the plaintiff, Juanita Brooks, respected Utah historian and author of a number of scholarly books, prepared a lengthy Report on the History and Uses of the Green River . . . (1963).

For the State of Utah, Otis "Dock" Marston, noted river runner and historian of the Colorado River, whose several other works we have used extensively (see bibliography), wrote Water Transport on the Green River in Utah (1962), a work based in large part on primary sources. Marston also prepared a lengthy Commentary (1963?) on the Report of Juanita Brooks noted above.

We have been advised by Dallin W. Jensen, Assistant Attorney General, State of Utah, and specialist in water matters, that the three actions noted above are the only cases that have come to court involving the navigability of the rivers of the Upper Colorado River system within the State of Utah.

James H. Barrett, Special Assistant Attorney General, State of Wyoming, advises that there has been no legal action between the United States and Wyoming regarding navigable waters. A similar letter was David W. Robbins, First Assistant Attorney General, State of Colorado. Robbins did write that he understood the Corps of Engineers on occasion had given the opinion that the Colorado River from the Utah-Colorado state line to approximately Grand Junction was navigable to the degree that they had asserted jurisdiction. The matter has never been tested in court, Robbins believes. No reply was forthcoming from a letter on this matter addressed to the Attorney General of New Mexico, Santa Fe.

CHRONOLOGICAL HISTORY OF THE NAVIGATION OF THE RIVERS OF THE UPPER COLORADO RIVER BASIN

The following pages contain a chronology of the navigational history of the Green and Colorado rivers, and of the San Juan River, and the major tributaries of each.

Each voyage, trip, or other usage, and the available information relating thereto, is listed chronologically for each river. Each is numbered. An exception is made for the tributaries which are given a single number.

No distinction is made in the chronology for distances covered, or reaches involved. In those instances where a usage begins on a tributary and continues down the main stem, that usage is included in the chronology of the main stem. Thus, voyages which began on the Green River but continued on down the Colorado are listed under the Green River. Where a usage is limited solely to a tributary that usage will be found under the chronology of the tributary.

Ferries on the Green and Colorado rivers have been listed together in separate sections and each has been assigned a single number.

In the compilation of these chronologies a wide variety of sources has been used. Some of these sources have provided limited data about a navigational usage and thus in a number of entries under these chronologies full information is lacking. A listing of all sources appears under the bibliography. Where the material available was particularly abundant we have been selective notably in those reaches found to be navigable by court decision.

A listing of the reaches and tributaries will follow the chronologies. This will include a listing of the pertinent usage numbers for each and thus provide an index to the navigational history of each reach and tributary.

General statements about navigability of any river, reach or tributary, will be found in the section devoted to reaches and tributaries.

Maps showing most locations will be found in the section on reaches.



Green division of the Colorado River Basin

CHRONOLOGICAL SUMMARY OF
NAVIGATION ON THE GREEN RIVER

1. 1825 Ashley

General William Henry Ashley, explorer, trapper and mountain man journeyed down the Green River from Wyoming, briefly through Colorado and into Utah. Ashley's expedition is the first recorded exploration of the Green River (Woolley, 1930, 31-33).

In an attempt to further his business interests as a partner in the American Fur Company, Ashley decided to search the Green River for better trapping areas (Brooks, 1963, 12).

On April 22, 1825 (Brooks, 1963, 12) Ashley dropped his bull boats, loaded with supplies and trade goods, into the Green River, 15 miles above the mouth of the Big Sandy in Wyoming. The bull boats, constructed of pitch-smearred buffalo skins stretched over a 30 ft. pole, were not well suited to the navigation of the Green's fast water canyons and were wrecked below the "Tewinty" -- the Uinta or Duchesne River, according to Marston (1955, 59). The expedition continued on in a wooden canoe but was forced to abandon the river near Minnie Maud Creek in Desolation Canyon (Brooks, 1963, 22). On May 28, the trappers traded for horses from a band of Indians and returned to the rendezvous on Henry's Fork in Wyoming.

Ashley's journal of the 1825 adventure has been edited by Morgan (1954-1955). Ashley wrote a full account of his Rocky Mountain adventures edited by Dale (1918). Additional documents and letters of Ashley and his contemporaries have been edited in a monumental study by Morgan (1964).

2. 1831-1836 Julien

There is some evidence that fur man Denis Julien trapped along the Green River in Utah. He left six inscriptions on rocks and these constitute the evidence we have of his travels in the canyon country. Two of these have been found on what is known as Inscription Rock near the junction of the Whiterocks and Uinta rivers southwest of Vernal, Utah, in the Uinta Basin. One is no longer visible, the other reads "Denis Julien, 1831."

The initials "D J" punched into the rocks at the mouth of Chandler Creek in Desolation Canyon suggest that Julien trapped the Green River. In 1836, Julien and his Indian wife trapped in Labryinth Canyon on the Green River. Near the mouth of Hell Roaring

Canyon and again above Bowknot Bend, Julien left inscriptions. The first portrayed a masted boat and a flying sun, or bird, on the canyon wall; the second read "D Julien 16 Mai 1836" (Marston, 1969b, 233; 1969a, 58).

Marston speculates that Julien returned to the Green in the fall of 1836 and boated down through Cataract Canyon. Thirty miles below the mouth of the Green at mile 185.5 the trapper left another inscription that reads "1836 D. Julien" (Marston, 1969b, 233).

The signature of Julien in Cataract Canyon was first seen by Robert B. Stanton in 1889 but was not relocated until 1964 (by Otis "Dock" Marston) just before it was covered by the rising waters of Lake Powell. Photograph in Belknap and Belknap (1974, 53). In addition to the sources cited above, Kelly (1933) published a first article.

3. 1849 Manly

William Lewis Manly came west in 1849 like thousands of other young men seeking a fortune in the California gold fields. The Manly party was late on the road and was faced with the prospect of wintering in Salt Lake City among the Mormons. The many forbidding stories circulating at the time about the Mormons convinced Manly of the need for an alternate route. An abandoned raft on the banks of the Green presented that alternative. Manly, M. S. McHahon, Charles and Joseph Hazelrig, Richard Field, Alfred Walton and John Rogers resurrected the sunken raft and embarked on the perilous journey down the Green River (Brooks, 1963, 31). Their makeshift boat was 12 feet long about 6 or 7 feet wide and powered by oars and poles (Marston, 1955, 61; Woolley, 1930, 33-34).

They carried only 6 guns, an ax, a camp hatchet, some smaller hatchets and clothing. They intended to supply their own food enroute (Brooks, 1963, 32).

The exact date and place of departure is not known.

The boat struck a boulder in Disaster Falls and the party, unable to dislodge it, was forced to abandon the craft. Next the men built two canoes of pine wood each about 15 feet long and 2 feet wide and lashed them together according to Marston, (1955, 61). These canoes could not carry the load and an additional 25 foot-long canoe was built. Further down the river the canoes capsized and several of the men narrowly escaped drowning. After this incident all except McHahon and Field, agreed to leave the river. They acquired horses from Chief Walker in the Uinta Basin and rode to Hobble Creek (present day Springville, Utah) where they

found the very wagon train they had separated from. McHahon and Field later reconsidered their decision to stay on the river and crossed the High Uintas and went on by land (Brooks 1963, 33).

Manly later suffered additional hardships when the wagon train attempted a short cut to California through Death Valley. His excellent account of his adventurous trip west was published in 1894.

4. ca. 1867-1941 Logging Activities

During the building of Union Pacific Railroad more than 300,000 ties were floated down Green River to Green River, Wyoming (Urbanek, 1967, 89). As early as 1867, the Union Pacific cut ties on the head of the Green (Spencer, n.d., 4). One source states that Lodgepole pine trees were cut to supply ties for the use of the Union Pacific Railway from 1868 to 1905. From 1905 to 1956, tie operations on the upper Green River continued on a fairly large scale and lumber production was mainly a by-product of the tie sawing (U.S. Forest Service, Map of Bridger-Teton National Forest, Bridger Division, 1968).

It has not been determined that ties were floated down the Green continuously following the construction of the Union Pacific Railroad. There was a tie drive down the river in 1898 (Kvenild, 1963, 260).

According to Bill Carr (Interview, 1975), ties that were cut near the head of Green River were placed in the river 7 or 8 miles below Green River Lakes. There was a tie camp at the head of the Green in 1897, and 1919 was the last year logs were cut in the Green River Lakes area, according to Carr. From 1900 to 1905 both ties and mine props were cut in the upper Green River area and floated down the Green. Mine props were used for coal mines in Evanston and Rock Springs (Bridger-Teton National Forest, Forest History Files).

Gust Peterson (Interview, 1975), an employee of the Standard Timber Company (of Omaha Nebraska) for 13 years, said that the company floated railroad ties down the Green until 1941 from at least three tributaries -- La Barge, Horse, and Cottonwood Creeks. Before 1919, the Standard Timber Company floated ties from as far up as the Green River Lakes, north of Daniel, Wyoming.

From 1919 to 1928, the company floated ties and mine props down Cottonwood Creek between Daniel and Big Piney, Wyoming to Green River City, Wyoming (Peterson, Interview, 1975; Rock Springs Miner, March 19, 1920).

In 1928, the company moved to Horse Creek near Daniel, Wyoming. Ties were floated down Horse Creek to a tie boom at its mouth. When the water was high logs were turned loose down the Green to float to Green River City.

In 1937, Standard quit cutting ties on Horse Creek and moved south to La Barge Creek, south of La Barge, Wyoming. There was no boom at the mouth of La Barge (Peterson, Interview, 1975). Logs floated down to Green River City where they were pulled out of the river (Green River Star, October 3, 1968). A sawmill operated at the mouth of Bitter Creek just south of Green River City, where many of the logs were used as lumber to build many of the early homes in Sweetwater County, Wyoming (Green River Star, June 28, 1962).

The last log drive down Green River was in 1941. After 1941 ties were trucked out of the mountains (Peterson, Interview, 1975; Sundgren, Interview 1975). Gust Peterson said three boats were used on tie drives -- one for the cook, one for the commissary, and one for bedding for the tie hacks who followed the ties down river. Peterson was the cook on many of the tie drives of the Standard Timber Co. The boats were placed in the river with the ties and taken out when the cook found a suitable place to make camp each night (Peterson, Interview, 1975; Kvenild, 1963).

5. 1868 Ewing -- Hook

During the early summer of 1868, Jesse Ewing, H. M. Hook and three or four other men left the town of Green River, Wyoming, in three flat bottomed boats. They carried supplies and mining tools since the men intended to mine what was rumored to have been a very rich gold prospect in Brown's Hole Country. Somewhere in the Canyon between Flaming Gorge and Brown's Hole, one of the boats was upset in a rapid and Hook drowned. The rest of the party left the area after Hook's death, except Ewing, who continued prospecting (Brooks, 1963, 133-136).

6. 1869-1872 Powell

Navigation of the Green and Colorado rivers on an extended scale began in 1869 when Major John Wesley Powell made his famous first voyage. Powell's party, consisting of ten men, left the new railroad station at Green River, Wyoming on May 24, 1869. Traveling in four boats, three of 21 feet in length and one of 16 feet, built with water-tight compartments at bow and stern, the explorers spent three months in the pioneer traverse of the long line of canyons extending to the foot of Grand Canyon, a thousand miles below Green River station.

In 1871, Powell returned to make another run through the canyons. The second voyage, which began at Green River, Wyoming, on May 22, was largely a duplication of the first, but it was better equipped a circumstance made possible through government funding. The party of 11 men traveled in three 22-foot boats each carrying water-tight compartments. Powell broke the voyage

at Lee's Ferry in Arizona at the foot of Glen Canyon. Before the end of 1872, the explorers returned to the river but they found the Colorado unseasonably high. The rough water so buffeted the boats that Powell decided to end the second expedition at the mouth of Kanab Creek about halfway through Grand Canyon. As head of the newly-formed U.S. Geographical and Geological Survey of the Rocky Mountain Region, John W. Powell carried on further extensive explorations in the basin of the Upper Colorado but he did not return to the rivers after 1872.

Powell always regarded his explorations as investigations made in the spirit of science rather than in the name of adventure. When it comes to the voyages Powell dispelled the pre-1869 myths of waterfalls and whirlpools and he proved that those portions of the Green and Colorado traveled in 1869 and 1871-72 were navigable. But Powell's report (1875) which described the many narrow escapes and tough portages discouraged river travel and for 17 years after 1872 there was no extended travel on either the Green or the Colorado rivers.

There is a very large literature on Powell, his river trips and his work as a scientist. On the river explorations, Powell's own works (1875, 1895) are primary sources. Darrah's work (1951) and Stegner's (1954) on Powell's life and work are standard. Crampton (1972, 239) lists recent references. Marston (1955, 60-61) discusses the design of Powell's boats, the first built specifically for use on the Green and Colorado, and the Major's navigational techniques. Dellenbaugh (1926), a crewman, reported the second voyage. The Utah State Historical Society through the medium of its Quarterly, 1947-1949, has published a number of the diaries of the members of both the 1869 and 1871-72 expeditions.

7. 1876 Wright

In Cataract Canyon, W. E. Mendenhall reported seeing the following message inscribed on a rock - "F. W. Wright passed here in 1876 lost one boat in this rapid." Marston (1960, 300) speculates that this might be the first trip through the canyon after the Powell expeditions. No further information about F. W. Wright has come to light.

8. 1889-1890 Stanton

Robert Brewster Stanton was the central figure in one of the most imaginative enterprises ever to touch the Green and Colorado rivers. In 1888, Frank M. Brown, a Denver promoter, organized the Denver, Colorado Canyon and Pacific Railway and planned to build a railroad from Grand Junction, Colorado, through the canyons of the Colorado to tidewater. Associated with Brown was Robert B. Stanton, a distinguished engineer, who was placed in charge of the railroad survey.

The survey was begun March 28, 1889, on the Colorado River at Grand Junction, Colorado, where Brown, and Frank C. Kendrick set the first stake. Kendrick and assistants carried the survey on down to the mouth of the Green River (see under Colorado River: 1889 Frank Kendrick) at which point the main survey party was to take over. Kendrick was equipped with a single boat, an open dory made of pine and ribbed with oak. Five men made up the party. The survey was made without mishap though the party portaged 12 miles around Westwater Canyon in Utah. Having reached the mouth of the Green River, Kendrick's men pulled and rowed their boat up the Green River 119 miles to Green River (in 1889 called Blake). The dory was used in the first Stanton expedition down the Colorado but was lost in Cataract Canyon. Kendrick's brief diary of his survey has been edited by Stiles (1964).

The main party, under Brown and Stanton, traveled by the D. & R. G. W. Railway to Green River, Utah, and boated down the Green to the confluence of the Colorado where the instrumental survey was tied in with that brought down the Colorado by Kendrick.

The Stanton-Brown expedition was outfitted with five 15-foot clinker-built, thin red cedar keel-bottomed hunting and pleasure boats, and an ordinary flat-bottom dory used by the Kendrick party. Each of the larger boats was equipped with watertight compartments at each end. No life preservers were carried! The expedition, composed of 16 men, left Green River, May 25, 1889.

The expedition was plagued with disaster. Two boats were lost in Cataract Canyon along with many provisions. At Hite, in Glen Canyon, the party split into two groups. One remained behind to carry the survey through Glen Canyon to Lee's Ferry; Brown and Stanton hurried on to make a quick reconnaissance. On July 9, the advance party plunged into Marble Canyon. Within a few days, three men, including Frank Brown, had drowned in the rapids and Robert B. Stanton, now in charge, quit the river.

Undaunted by setbacks and tragedy, Stanton was determined to see the survey completed and the railroad built. Assuming control of the company, the doughty engineer was back on the Colorado before the end of 1889. Equipped with three, sturdy oak boats, 22 feet long and specially designed and fitted with safety features, including life preservers, Stanton freighted his boats by wagon to the mouth of North Wash, in Glen Canyon. The party, now consisting of 12 men (only 3 from the previous expedition), embarked on December 10, 1889. One boat was lost in Grand Canyon but Stanton and seven men successfully completed the survey to tidewater on the Gulf of California which they reached on April 26, 1890.

Stanton thought the railroad was feasible and published a paper (1892) to prove the point but no capital was found and the venture failed. The Stanton railroad survey has resulted in a number of publications. Stanton's own summary edited by Dwight Smith (1965) is the best account. See also Smith's article (1960).

9. 1890 Ross

In 1890, according to Marston (1960, 296), B. S. Ross of Rawlings, Wyoming, and a companion in a skiff, boated from Green River, Utah, to the first rapid in Cataract Canyon and then back up to Green River. The Salt Lake Tribune March 20, 1891, reports a trip by R. S. Ross and two companions in 1891.

10. 1891 Best

In two boats close to the design of those used on the second Robert B. Stanton expedition, James S. Best led a party from Green River, Utah down the river with the intention of prospecting in the Grand Canyon. One boat was lost at Mile 204.5 in Cataract Canyon and the party of nine men continued on in a single boat. At Hite they borrowed a skiff and went on to Lee's Ferry (Marston, 1960, 298; LaRue, 1916, 21).

11. 1891 Snyder

A Vernal man named Snyder and his son, according to Marston (1960, 292; 1955, 62) lost their boat in the canyon of Lodore in 1891. They borrowed a horse from the Chew family and rode out of the area. No details about the purpose for the trip are known.

12. 1891-1897 Major Powell

The 35 foot steamer Major Powell was built as a commercial enterprise undertaken by the Denver and Rio Grande Railroad. The boat had an eight foot beam, drawing 1 1/2 feet and was equipped with an upright boiler with two 6 horsepower engines and twin screws. In August, 1891, the Major Powell was launched at Green River, Utah, but after running 23 miles to the mouth of the San Rafael River, two propellers were broken and the trip was abandoned. In April, 1892, four men succeeded in cruising the boat a few miles downstream (U.S. v. Utah, 1931, Report of the Special Master, 58; Marston, 1960, 298; Woolley, 1930, 38).

In April, 1893, William H. Edwards repaired the Major Powell, changing it from a wood to an oil burner, and ran it down the mouth of the Green River and on down the Colorado River in Cataract Canyon nearly to the first rapid. He then returned up the Green to Wheeler's Ranch opposite the mouth of the San Rafael. About ten days later, the round trip was repeated (U.S. v. Utah, 1931, Report of the Special Master, 58; Marston, 1960 298; illustrated in Marston, 1960, 299):

According to testimony taken in U.S. v. Utah, 1931 (Record, 1892-1945), the Major Powell was dismantled in 1894 because it did not have sufficient horsepower to navigate the Green River current upstream. However, Marston (1960, 298) reports a trip by the steamer in 1896. Four young men took the boat from Green River, Utah to the confluence and up to Moab. They returned to a point 42 miles below Green River, Marston (1960, 298) reports a news source that the Major Powell may have gone through Cataract Canyon, probably in January, 1897.

13. 1891-1913 Nathaniel Galloway

Nathaniel Galloway trapped and prospected along the Green River between 1891 and 1913. He logged numerous trips up and down the river during that time and was perhaps one of the most experienced and capable river men in the area. On some trips Galloway was accompanied by one of his sons, Parley or John. It was Galloway who perfected the effective stern-first technique for running the rapids (Marston, 1955, 63-64; Woolley, 1930, 38).

In September 1896 Galloway and his 13 year old son put their boat into the Green River at Henry's Fork and travelled downstream to Little Hole. Here the Galloways met William Chesley Richmond and Frank Leland who had lost their supplies and placer mining equipment at Ashley Falls. Richmond teamed up with Galloway (whose son was left at Vernal) and the two went entirely through the canyons of the Colorado reaching Needles, California in February, 1897 (Marston, 1960, 292).

In 1897, Galloway trapped through the canyons from Vernal, Utah to Lee's Ferry and in 1898, he routinely boated from Green River, Wyoming, to Green River, Utah: In the same year he guided Julius F. Stone in Glen Canyon (Marston, 1955, 63-64).

In 1901, Galloway trapped from Meeker, Colorado, down the White River and on down the Green to Green River, Utah (Marston, 1960, 292). In 1903, with his son Parley, N. Galloway from Vernal boated down the Green to its mouth and up the Colorado to Moab. This was followed by a trip down the White River (Marston, 1960, 292). The same team went through Desolation, Gray, Cataract and Glen Canyons reaching Lee's Ferry in November, 1904 (Marston, 1960, 292). In September-October, 1905, Nathaniel again ran the upper canyons of the Green River (Marston, 1960, 292).

In 1908, N. Galloway tested a steel boat on a run from Green River, Wyoming, to Green River, Utah, and in the same year he ran again through Desolation and Gray Canyons. In 1909, Galloway and his son Parley made a spring run down the Yampa and rode through Whirlpool and Split Mountain canyons (Marston, 1960, 293; Marston, 1955, 64).

In 1909, N. Galloway piloted the Stone expedition through the canyons (see 1909 Julius F. Stone).

In December, 1910, N. Galloway in an experimental canvas boat ran through Desolation and Gray canyons and then with his son, John, he rode the canvas boat from Green River, Wyoming, to Green River, Utah. John went on in a solo run through Cataract Canyon to North Wash in Glen Canyon (Marston, 1960, 293; Marston, 1955, 65).

In May 1912, N. Galloway boated and trapped the Green from Green River Lakes to Green River, Wyoming (Marston, 1960, 293). In November, 1912, Galloway trapped through the canyons of the Green to Green River, Utah, where he joined forces with Charles Smith. The two boated through Cataract Canyon; Galloway ended his river career on this trip early in 1913 (Marston, 1960, 293).

See also 1924-1926, John and Parley Galloway.

14. 1892 Faatz

F. G. Faatz, resident of Sanpete and Sevier counties, Utah, left his name and the date August 27, 1892 on the rocks above Cataract Canyon. His name appears again with the date November 16, 1892 in lower Glen Canyon. There is no other evidence of the Faatz voyage (Marston, 1960, 300).

15. 1893-1894 Howland

In December, 1893, Henry Howland and one other boated down the Green from Green River, Utah, on a 60-day hunting and prospecting trip. The boat was 18 feet long and 3 1/2 feet wide. In August, 1894, Howland took his father down the Green and up the Colorado to Moab. In August and September, 1895, Howland was employed by one Bailey as guide and boatman for a hunting and fishing trip between Green River, Utah, and Moab (U.S. y. Utah, 1931, Record, 4603-4633).

16. 1896 Flavell-Mantos

George F. Flavell, prospector and trapper, and his half breed companion, Ramon Mantos, travelled on the river from Green River, Utah, all the way to Needles, California. They left Green River on August 27 and were out of the Grand Canyon on October 30, 1896. According to Marston (1955, 63) Flavell, who was an experienced water man, built his skiff with the unusual difficulties of fast water navigation in mind. It was flat bottomed, 15 1/2 feet long with a 5 foot beam, a high tapered bow, a broad stern and no compartments. The boat was a success;

Flavell lined only four rapids on the entire trip (Marston, 1960, 292; Woolley, 1930, 38).

17. 1896 Richmond-Leland

William Chesley Richmond and Frank Leland built a boat and set out down the Green River from Henry's Fork, towing a placer mining outfit behind them. Their outfit was wrecked at Ashley Falls. Richmond joined up with Galloway on a run clear through Grand Canyon (see 1891-1913 Galloway) but Leland walked out (Marston, 1955, 63).

18. 1900 Stevenson

A. V. Stevenson and son of Colorado Springs, Colorado, started on a prospecting trip down the Green River from Green River, Utah, September 19, 1900. Their 18-foot boat was built especially for the run through Cataract Canyon by George W. Durant and J. A. Ross. It had a five foot beam and drew 8 inches when loaded with two men and 2,000 pounds of cargo (Grand Valley Times September 28, 1900).

Although the two had intended to prospect all the way to Needles, California, they quickly became discouraged when they found few prospects and, after reaching the first rapid in Cataract Canyon, they went on up the Colorado to Moab (Moab Grand Valley Times, October 12, 1900; U.S. v. Utah, 1931, Report of the Special Master, 60).

19. 1900 Wolverton

In February 1900, Edward T. Wolverton spent several days prospecting along the section of the river between Wimmer Ranch (opposite the mouth of the San Rafael River) and the confluence of the Green and Colorado rivers in a rowboat with a 9-inch draft (U.S. v. Utah, 1931, Report of the Special Master, 60).

20. 1901 Harry Ratliff

In 1901, Harry Ratliff and two other men surveyed the canyons of the Green River from the Colorado boundary to Jensen, Utah, to determine if a railroad right of way could follow the course of the river (Daughters of Utah Pioneers, Builders of Uintah, 1947, 247).

21. 1901 Ross

Joseph A. Ross took a surveying party, in a rowboat, down the Green River to the head of Cataract Canyon in July, 1901. The group was surveying the site of a proposed sanitarium (U.S. v. Utah, 1931, Report of the Special Master, 60).

22. 1901-1902 Undine

In 1901 a large boat, the Undine, was built in Rock Island, Illinois, and brought to the Green River for the purpose of carrying tourist parties. The boat was 56 feet long with an eight-foot beam, drawing 12-14 inches, having a 22 horsepower coal-burning engine, and a stern paddle wheel. The boat was equipped with capstan, block and tackle, line and poles for use when stuck on sandbars.

The Undine's first trip was down the Green to a proposed sanitarium site at the head of Cataract Canyon. After camping there a few days the party went up the Colorado to Moab.

In February, 1902 the Undine returned to Green River, Utah with passengers. In May, the boat having returned to Moab, made a trip upstream from Moab, six miles and back. On a second trip upstream the Undine was overturned and wrecked on a riffle eight miles above Moab.

The building of the steamer Undine was heralded as the beginning of commercial navigation on the Green and Colorado rivers but the wreck of the boat discouraged additional development (Moab Grand Valley Times, December 13, 1901; January 10, February 2, May 8, 16, 23, 1902. U.S. v. Utah, 1931, Report of the Special Master, 60; illustrated in Belknap and Belknap, 1974, 35).

23. 1902 Reeder-Wheeler

In August 1902, W. F. Reeder and R. C. Wheeler went down the Green River to the head of Cataract Canyon in a rowboat, 16 feet long with a 4 foot beam. They carried only supplies for a prospecting venture. In September, October, and November, Reeder and Wheeler made six trips down to the mouth of the Green, prospecting and panning for gold. They also made a trip down to the confluence of the Green and Colorado and up to Moab (U.S. v. Utah, 1931, Report of the Special Master, 61).

24. 1902-1906 Reeder

Between 1902 and 1906 W. F. Reeder trapped along the Green River between Green River, Utah and Cataract Canyon in his 16-

foot rowboat. Reeder was sometimes accompanied by R. C. Wheeler (U.S. v. Utah, 1931, Record, 4870-4895).

25. 1903-1905 Yokey

In 1903, "Cap" H. T. Yokey, who had lived many years on the Green River and built and operated many boats, travelled down the Green to its mouth, and returned, in a 15-foot rowboat. In 1905, Yokey built the Black Eagle, a steam-powered boat 40 feet long, six-foot beam, drawing 6-8 inches, equipped with a tube boiler and a 20 horsepower engine. On a trip down the Green to Valentine Bottom, 84 miles below Green River, the boiler tubes became clogged with mud and it blew up. The boiler and engine were loaded on Wolverton's Wilmont (see 1903-1908 Wolverton) and brought back to Green River (U.S. v. Utah, 1931, Report of the Special Master, 61-62; Baker, 1961, 27-28).

26. 1903-1912 Wolverton

In 1903, autumn, Edward T. Wolverton built the Wilmont, 27 feet long with a 5 1/2 foot beam, having a 4 horsepower motor and stern wheel, costing \$1,350, and drawing empty 10 inches. The engine was too light for upstream work; but in this boat, in the autumn, he made two round trips to the mouth of the Green River and one up the Colorado to Moab, taking tourists for compensation. Later, in 1904, he put in a 7 1/2 horsepower engine and sidewheels and made two trips to Moab, one for hire; after that he put in a 14 horsepower engine and carried supplies down to his ranch (24 miles). He also built two scows 20 and 30 feet long, to haul low grade copper ore from a mine located 20 miles below his ranch on the west side of the river. This mine closed in 1908, and only 30-40 tons of copper ore were ever taken out. He carried several tons of this ore from a point opposite his ranch, up the river to Green River in the Wilmont and in a scow. He also made in the Wilmont several more round trips to Moab for hire and also trips for hire with hunters and tourists; he frequently pushed a scow loaded with supplies down to Townsite Bottom, and pushed it back empty. In 1908, the Wilmont was caught in the ice, became leaky, and the machinery was taken out (U.S. v. Utah, 1931, Report of the Special Master, 61; Abstract, 1372-1400).

In 1908, Wolverton built the Navajo, 22 feet long with a 5-foot beam, drawing 1 1/2 feet when empty and up to 3 feet when loaded. The boat was powered by 7.5 horsepower engine and driven by a screw-type propeller. From 1908 to 1912, the Navajo was used for hire to carry hunting parties and also tourist parties to the head of Cataract Canyon -- also engineering and hunting parties down the Green and up the Colorado to points below Moab; trips were also made for hire to persons at Townsite Bottom;

and also in towing boats loaded with supplies -- possibly 20 trips being made to the confluence. In 1912, Wolverton gave up the business, as he could not make it pay, and abandoned the boat at his ranch (U.S. v. Utah, 1931, Report of the Special Master, 65; Abstract, 1372-1400).

27. ca. 1905 Jensen-Dennis

In a wooden boat 14 feet long, 5 1/2 feet wide, which he built himself, Jens Jensen and a friend, Charlie Dennis, put in the Green at Elm Park in the Canyon of Lodore and ran through the canyons to Jensen, Utah (Jensen, 1960).

28. 1905 City of Moab - Cliff Dweller

The City of Moab, one of the largest boats to be put on the upper Colorado River, was built by John L. Lumsden and Charles W. Anderson to haul freight and passengers from Green River, Utah, to Moab, Utah. The fifty-foot boat was built in Grand Junction, Colorado at a cost of \$15,000. It had a sixteen or eighteen-foot beam, drew twelve to fourteen inches of water and was propelled by a gasoline engine.

The City of Moab was launched on the 5th or 6th day of May, 1905 and, with a crew of ten aboard, began her maiden voyage several days later. The entire trip was plagued with trouble, principally due to low water. Between the railroad bridge at Green River and the mouth of the San Rafael, the boat struck bottom several times, the impact tossing the crew overboard. Below the San Rafael there was difficulty in finding the river channel. Finally, at The Slide on the Colorado River above the confluence, the City of Moab was forced to turn back up river and make her way to the mouth of the San Rafael.

After spending several days there, the boat was taken to the Wolverton ranch where the propeller was replaced by a stern-wheel and a new coal-burning engine was installed. The boat was lengthened by ten feet and renamed the Cliff Dweller.

After the modifications were completed, the trip upstream began again. Progress was hampered by sandbars and gravelbars. The voyage was further complicated by the fact that all of the coal on board had been used and the crew was forced to burn wood for fuel. The upstream voyage terminated at Ferry Riffle about one-quarter of a mile above the railroad bridge.

Soon after this first trip the Cliff Dweller was dismantled, renamed the Vista and taken to Saltair, on the Great Salt Lake (U.S. v. Utah, 1931, Report of the Special Master, 62-63. The brief history of the boat is chronicled in the Moab Grand Valley

Times, March 10, 1905 - August 24, 1906. Illustration in Belknap and Belknap, 1974, 12).

29. 1906 Birch

During the first years of the twentieth century some consideration was given to the possibility of opening navigation on the Green River by way of Desolation and Gray canyons to connect the gilsonite mines of the Uinta Basin with the Denver & Rio Grande Western Railway at Green River, Utah (Remington, 1959, 226).

One who actually investigated was James E. Birch. During the week of October 25-31, 1906, Birch on behalf of the Indinta Mining and Power Company, Denver, made a survey of the Green River from Ouray to Green River, Utah, to determine the practicability of opening the river for navigation. Four men, riding in two rowboats, made the survey in forty hours actual traveling time. The party ran all the rapids but two. Birch believed that the river in this reach could be made navigable for traffic in both directions through the use of dynamite and the building of one, possibly two, locks, all at a cost of between \$109,000.00 and \$130,000.00 (Birch, 1907).

Birch's report was probably the basis for a request by the D & R G W Railway for an opinion from the Corps of Engineers, according to Remington (1959, 226).

"A. McKenzie, Chief Engineer of the United States War Department, was solicited for a statement on the feasibility of dredging the Green River for a steamboat line, and he replied that the project might be practical from an engineering and economical standpoint. Engineers of the D & R G W estimated the cost of dredging a path for the proposed steamboat system to be as little as \$100,000" (Remington cites the Vernal Express, December 20, 1907; July 31, 1908). Despite those reports nothing was done about making the stream navigable (Remington, 1959, 226).

30. 1907-1908 Loper and others

On a prospecting and photographic venture Albert Loper, Charles Russell and Edwin Monett left Green River, Utah, in September, 1907. They found prospecting poor and Loper wet his camera when he was hung up on a rock. The party continued on to Hite where Loper waited for his camera to be repaired. The others went on prospecting Glen and Grand canyons. Loper later boated to Lee's Ferry and then pulled and rowed his boat back to Hite early in 1908 (Marston, 1960, 302).

Albert "Bert" Loper spent many years in the canyon country of the Colorado basin. Pearl Baker, who knew the man well, has written his biography (n.d.). Loper gave extensive testimony in *U.S. v. Utah*, 1931, Record, 2306-2448.

31. 1907-1909 Oppenheimer - Paddy Ross

In 1907, Milton Oppenheimer of Elgin (across the river from Green River), Utah, put the Paddy Ross into operation on the Green River, primarily, it appears, to engage in the tourist business and to serve the ranchers along the Green River. The boat was 27 feet long, 6 1/2 foot beam, 18 inch draft. It was powered by a 14 horsepower gas engine and driven by a paddlewheel on the stern.

The Paddy Ross on a maiden voyage in November, 1907, carried 1 1/2 tons of freight and 12 passengers, and traveled to the bend of Cataract Canyon and returned. The boat of light draft, and running at low water, experienced no difficulty on the run.

The boat was operating in 1908 and was probably the vessel used by Guy Sterling, a mining engineer in a trip, May 27-June, from Green River, Utah, to the head of Cataract Canyon and return.

In 1909, the Paddy Ross was used by Leeds and Hughes of the Corps of Engineers (See Colorado River. 1909 Corps of Engineers). (*U.S. v. Utah*, 1931, Record, 4195-4270, 5230-5249; Moab Grand Valley Times, July 26, October 25, November 22, 1907; March 20, 1908; illustrated in Marston, 1960, 299).

32. 1907-1924 Wimmer

Tom G. Wimmer was a long time rancher and river man in the Green River area. Wimmer owned the Ruby ranch located about 25 miles below Green River, Utah. Wimmer used a 14 h.p. gasoline launch to travel between Green River and his ranch (Moab Grand Valley Times, November 22, 1907).

Wimmer also operated the Red Star Livery and Transfer Company which, in addition to hauling freight to outlying areas in South-eastern Utah by wagon, carried equipment by boat for the United States Reclamation Service. During the summer, fall and winter of 1914 the Reclamation Service was making drilling tests for a damsite at the confluence of the Green and Colorado rivers. The supplies and coal for the operation were hauled by wagon from Green River, Utah to the Ruby ranch. There the supplies were transferred to a 12 by 20 foot sternwheel launch. The entire trip took seven to eight days. The scow carried as much as ten tons of material.

As early as 1917, the Red Star Livery and Transfer Company offered tourist trips through the scenic canyons of the Green and Colorado rivers.

In September, 1922 Wimmer was the boatman for a party of engineers that included H. W. Dennis, chief engineer of the Southern California Edison Company; R. E. Caldwell, State Engineer of Utah and Franklin Thomas.

In 1924 Wimmer took two geologists from the Martin Oil Company from Green River, Utah, to Moab and back in a rowboat equipped with a 4 h.p. Evenrude motor (U.S. v. Utah, 1931, Record, 4732-4861; Wimmer, 1959).

33. 1908 Teddy R.

The Teddy R. was a gasoline launch with a carrying capacity of about 15 persons. This pleasure boat operated on the Green River near Green River, Wyoming in 1908 (Green River Star, June 12, 1908).

34. 1908 Comet

In 1908 the Green River Navigation Company was organized with a capital stock of \$25,000 and began construction of a steamboat in Green River, Wyoming.

In July 1908 the steamboat started on her initial trip down Green River to Linwood, Utah (now covered by Flaming Gorge Reservoir) laden not only with freight for the fast developing ranches along the banks of the river, but with passengers who seized the opportunity of a boat trip to the confluence of Henry's Fork.

The boat was a stern-wheeler, twelve feet wide and sixty feet long. It was christened The Comet by M. N. Larsen's daughter Beulah, and launched July 4, 1908. The fare was \$5.00 and tickets were to be procured at the office of Hugo Gaensslen in Green River or of M. N. Larsen at Linwood, Utah.

One commercial hauling trip was made with the winter's stock for the Smith-Larsen Mercantile Company in Linwood. It also brought blacksmithing equipment for Keith Smith's blacksmith shop in Linwood.

Due to sandbars in the river channel the boat was tied up at Green River City and was used from time to time as an excursion boat in the vicinity of the town (Green River, Wyoming, Star, April-August, 1908; Dunham, 1947, 80, 81; Purdy, 1959, 29; Helga Larsen, Interview, 1975; Kenneth A. Turner, Interview, 1975).

According to one source, the Comet was equipped with cabins and weighed forty tons (Mortimer, 1925, 11). This paddlewheel steamboat made at least two trips to and from Green River, Wyoming and Linwood, Utah, and one trip up river to Big Piney, Wyoming. It was abandoned on the river bank near Expedition Island south of Green River City (Chadey, Letter, 1972; Riske, 1974, 35).

35. 1908 - ca. 1910 Sunbeam

According to Adrian Reynolds (Interview, 1975), former editor of the Green River, Wyoming, Star, Charles Johnson operated a small stern-wheel gasoline powered launch on the Green River. It was an excursion boat, seven feet wide and 25 feet long, and could hold eight to ten persons (Green River Star, May 22, 1908). It was named the Sunbeam and it operated from 1908 to around 1910.

Johnson's headquarters were on Expedition Island at Green River, Wyoming. The boat ran upstream four to five miles and downstream eight to ten miles from the island (Reynolds, Interview, 1975). John Moerke, Charles Johnson, and Max Peterson were owners of the launch (Green River Star, July 10, 1908).

The boat went as far north on the Green as Big Piney, Wyoming. On its last river trip, after it had been converted to a propeller propulsion boat, it sheared its propeller at Big Piney, was hauled overland to Fremont Lake, north of Pinedale, Wyoming, where it continued in service for long years afterward (Green River Star, Centennial Edition, June 28, 1962).

36. 1909 Blake

In June, 1909, Henry E. Blake, intending to engage in freight traffic to and from Moab, built a boat, the Ida B, 24 feet long with a 6 foot beam, having a 22 inch draft; it was equipped with a 14 horsepower engine and propeller. With two others Blake made a trip from Green River down to the confluence and up the Colorado to Moab and return. Blake took another trip on the Green to Townsite Bottom in July. In August, 1909, Blake built another boat, the Utah, using the Ida B's engine, and drawing 18 inches. In this, in September, he took for hire an excursion party of six together with 2,000 pounds of freight from Green River to Moab. He returned with a load of 1,000 pounds of peaches which spoiled on the trip! (U.S. v. Utah, 1931, Report of the Special Master, 65-66; Moab Grand Valley Times, June 18, September 24, 1909).

37. 1909 Martin-Woodward

In 1909, Tom Martin and Jules Woodward, two adventurous athletes from St. Louis, set off from Green River, Wyoming. The

adventure turned to mishap when they lost their boat, supplies, even their clothes in Red Canyon. They were forced to hike out of the canyon with only a pair of pants wrapped around their feet for protection (Marston, 1960, 293; Brooks, 1963, 115; Green River, Wyoming, Star, June 18, 25, July 2, 1909).

38. 1909 Merritt-Wimmer

E. T. Merritt and Tom Wimmer and a party of Salt Lake capitalists and real estate men travelled the Green River, Utah to Moab, Utah route in November, 1909. Included in the group were Howard Howland, N. E. Wolverton, E. T. Wolverton and H. E. Blake.

According to Merritt (Grand Valley Times, November 26, 1909) the object of the excursion was "to do the preliminary work for putting on a boat line from Moab to Green River. This includes an examination of the available lands along the valleys of the two rivers . . ."

39. 1909 Roff and others

F. C. Roff, H. E. Blake, H. B. Johnson and Leonard Gooch travelled from Green River, Utah and Moab, Utah in a 24 foot motor boat. According to the Grand Valley Times (June 18, 1909) the purpose of the trip was to "determine the feasibility of the rivers for navigation and the possibilities of this section in the way of freight and passenger traffic."

40. 1909 Stone

In this year Julius F. Stone, a prominent manufacturer, who had been associated with Robert B. Stanton in a mining enterprise in Glen Canyon, ran the canyons of the Green and Colorado from Green River, Wyoming, to Needles, California. It was a fast run. The party embarked on September 12 and reached Needles on November 19, 1909. Stone had four light rowboats especially built for the trip: 16 feet long, four foot beam, 18 inches deep and drawing 6-8 inches when loaded. The party consisted of ten men including Nathaniel Galloway (see 1891-1913 N. Galloway). The purpose of the trip was photography and adventure.

Stone's diary and many photographs will be found in Stone (1932). See U.S. v. Utah (1931), Abstract, 503-520; Freeman, (1923), 325.

41. 1911 Kolb Brothers

One of the more notable runs through the canyons of the Green and the Colorado from Green River, Wyoming, to Needles, California, was made in 1911 by Ellsworth L. Kolb and Emery Kolb, photographers who operated a studio at Grand Canyon. The brothers made the trip for adventure and for the purpose of taking motion pictures. They rode in two specially constructed, flat-bottomed rowboats, 16 feet long with a four foot beam, drawing eight inches when loaded with 1,200 pounds, and 4 1/2 inches when empty.

The expedition attracted national attention when Ellsworth Kolb published a book (1914) on the run. Clips from the motion pictures made en route have been shown to countless thousands of visitors to the Kolb Studio on the South Rim of Grand Canyon.

42. 1912-1918 Government Surveys

In 1912 the United States Bureau of Reclamation made a river survey including the stretch of the Green River below Green River, Utah; in 1914 and again in 1921 E. C. LaRue, a hydraulic engineer of the United States Geological Survey, made studies of this stretch; in 1926 E. T. McKnight and S. S. Nye, geologists of the Geological Survey, made a geologic examination of this portion of the stream; and in 1928 W. G. Hoyt, a hydraulic engineer of the Geological Survey, made additional investigations of the channel and other physiographic conditions along the stream (Woolley, 1930, 54-55).

43. 1913 Uteland Mining Company

In 1913, this company built a wooden barge, about ten feet wide and 20 feet long, to haul copper ore from its mine to a mill on the banks of the Green River. The copper mine was located about seven miles below Ouray, Utah. Col. George F. Timms operated the barge which was pulled by a motorboat called the Yellow Dog.

The distance from the mine to the mill was about two miles and the motorboat was needed because the Green River ran slow through this section. The barge operated for about one year. According to George E. Stewart (Interview, 1975) it worked fine when the river was high, but it stuck on sandbars when the river was low.

44. 1914 Reclamation Service

In 1914, August-September a Reclamation Service party in charge of John F. Richardson was engaged in making a survey for

a damsite and reservoir shortly below the junction of the Green and Colorado rivers. From July 10 to late August, a preliminary survey and trip to the junction and back had been made by Richardson and Captain Yokey, with a barge called the Betsy Ann, 32 by 8 feet, with a 6 horsepower motor boat, carrying several tons of equipment which was cached at the junction. At the end of August, more equipment and supplies, boiler, engine, casing, tools, drill rods, etc., were freighted from the Denver & Rio Grande Railroad station at Floy by T. G. Wimmer overland to his ranch on the Green River and were there loaded on boats and taken down to the proposed damsite. There were two scows about 24 by 6 feet, fastened side by side, with a five foot space between, making one craft about 18 feet wide; two motor boats 14-16 feet long by 4-5 feet wide, drawing 7-8 inches; three rowboats; a barge called the Betsy Ann; and Wimmer's Marguerite. The motor boats pushed the barge and the scows downstream. This flotilla took on board the drilling and machinery and equipment, 10 or 11 men and a woman cook, provisions, supplies and coal for fuel for the boats and for the drilling operations, the entire load on the barge and scows being variously estimated at four to ten tons. The drilling operations below the junction occupied over two months. During this period Wimmer made at least eight to twelve round trips on the Marguerite, bringing down at least half a ton of coal at a time and returning upstream; his down trips took two days or 14 hours running time and the up trips three days. During this period, also, Sawyer and Shaw took two trips in a motor boat up the Colorado River to Moab and return. The drilling operations were abandoned, owing to a sudden rise in the Colorado River and to a collection of driftwood which made further work impossible. Thereupon, the Betsy Ann was made into a steamboat by installation of a stern paddlewheel, and loaded with a little over one ton of drilling machinery, three passengers, and 600 pounds of coal brought down by Wimmer, it proceeded up the Green River; the Marguerite pushed one scow and two motor boats pushed the other scow upstream with the rest of the outfit loaded on them; arriving at Wimmer's Ranch, the equipment was taken overland to the railroad; this 95 mile trip upstream took five days, or in actual running time 36 1/2 hours -- a little over 2 1/2 miles per hour.

In 1915, Joseph A. Ross, with five others took the Marguerite down from Green River, Utah, on a pleasure trip (U.S. v. Utah, 1931, Report of the Special Master, 68-69; Illustrated in Belknap and Belknap, 1974, 22).

45. 1914 Russell-Loper-Reeder

Hoping to make a profit from photography of the canyons, Charles Russell and Albert "Bert" Loper in July, 1914, left Green River, Utah, in two steel boats. When one was lost in Cataract Canyon, they tied up the other one and walked out. Later

in the same year the cached boat was recovered by another party, composed of Russell and W. P. Reeder, but was sunk soon thereafter. The party continued to Hite and after bringing in a new boat, went on through Glen and into Grand Canyon where the last boat was parked and the party walked out (Marston, 1960, 302-303; U.S. v. Utah, 1931, Report of the Special Master, 68).

46. 1916 Carstarphen

A mining engineer named Carstarphen (or Carstoffien) explored the Green River in a rowboat for the purpose of building a branch railroad line up the Green through Desolation Canyon to Ouray, Utah. Carstarphen was superintendent of the Castle Peak Gilsonite mine.

According to George E. Stewart (Interview, 1975), Carstarphen planned to load gilsonite in steel drums and float them down to a boom at Green River, Utah, from Holbrook Bottoms, five miles below Ouray, Utah. From Green River the gilsonite would be shipped to market by train.

Henry "Hank" Stewart and C. C. Larsen went on the expedition in 1916 but the railroad was never built and no gilsonite was floated down the Green (Stewart, Interview, 1975).

The boat that was used in the expedition, built by George E. Stewart, Sr., was a rowboat about 17 feet long. The prow was built as high as the stern so that the boat could go through the rapids in either direction (Stewart, Interview, 1975).

47. 1916 Mendenhall

In February 1916, Walter R. Mendenhall, a mining prospector, and his partner built a boat having a 7-8 inch draft when loaded and went down the Green River to the confluence and up to Moab, Utah (U.S. v. Utah, 1931, Report of the Special Master, 69).

48. 1919 Utah Power and Light Company

In 1919 the Utah Power and Light Company sent a survey party down the Green River and favorable dam sites were found at Flaming Gorge, Canyon of Lodore, Split Mountain, Desolation Canyon and other places (Marston, 1960, 293-294). The boats, built by George E. Stewart, Sr., were 17 feet, wooden, and specially designed for Green River navigation; the bow and stern were about the same height (Stewart, Interview, 1975; Marston, 1960, 293).

49. 1921 USGS - Southern California Edison Company

In 1921, the United States Geological Survey and the Southern California Edison Company undertook a joint survey for damsites on the Green and Colorado rivers. The party of ten, under the direction of William R. Chenoweth, began the expedition on September 12, 1921.

The survey used two Galloway-type boats, 18 feet long with a 4 1/2 foot beam drawing 15 inches when loaded. The third boat was 15 feet long with an outboard motor. The fourth boat, piloted by Ellsworth Kolb, had been used in the Kolb brothers 1911 trip. The boats each carried from 1,600 to 1,200 pounds. Traveling from Green River down through Cataract Canyon the survey was completed at Lee's Ferry on October 8, 1921 (U.S. v. Utah, 1931, Report of the Special Master, 70; Abstract, 996-1003; Marston, 1960, 303). Ellsworth Kolb was head boatman on the expedition, his brother Emery went along as photographer. Ellsworth's diary has been edited by Rusho (1969). The Kolb brothers had boated the canyons in 1911 (see 1911 Kolb Brothers).

50. ca. 1922 Hyde

About 1922, William Hyde trapped from Green River, Utah, to the confluence of the Green and Colorado rivers and upstream to Moab (U.S. v. Utah, 1931, Record, 4432-4451).

51. 1922 U.S. Geological Survey

In the summer of 1922, a Geological Survey party was put in the field to make a complete topographic map and profile of the river from Green River, Wyoming, to Green River, Utah, and to correlate the several isolated surveys of reservoir sites previously made by the Bureau of Reclamation and the survey of parts of Desolation and Gray Canyons made by the Utah Power and Light Company.

Three boats for this expedition were built in Wilmington, California and shipped by rail to Green River, Wyoming. Two of them were of the Galloway type, 18 feet long and about 4 1/2 feet beam. The other one was 16 feet long and was similar in plan to a common flat-bottomed rowboat. All of them were decked over at each end, with only an open cockpit in the center for the oarsman. The end compartments were equipped with hatch covers which were fastened with thumb nuts. These covers were made water-tight by lining the contact edges with rubber. The frames of the boats were oak and the two large ones had ship-lapped sides. The bottoms were flat and were protected by oak strips running lengthwise. Three men, including the boatman, rode on each of the large boats and two on the small one. The passengers sat on the hatches. After some deliberation on names for the boats, the question was finally left to the boatmen with

the result that the names Utah, Wyoming, and Colorado were chosen and painted on the respective boats.

The 1922 survey resulted in the publication of accurate maps and profiles (16 sheets) of the Green River from Green River, Wyoming, to Green River, Utah. A detailed report of the survey is in Woolley (1930, 39-55). See also: Marston, 1955, 65; Marston, 1960, 303; Brooks, 1963, 119-125.

52. 1924 Stubbs-Rose

In 1924 Drew Stubbs and Ray Rose from Green River, Wyoming, boated the canyons of the Green River but lost their boat in Cataract Canyon and were forced to walk out to Moab (Marston, 1960, 294).

53. 1924-1927 John and Parley Galloway

John and Parley Galloway learned their boating skills from their father, Nathaniel Galloway.

In 1924, John and Parley Galloway left Green River, Utah and traversed Cataract and Glen canyons. During the next year the brothers ran down the Green from Nine Mile Wash to the confluence and then up the Colorado to the oil well below Moab. In the spring of 1926, John Galloway ran the Green again running from Green River, Wyoming, to Ouray, Utah. In the same year Parley made the same run, trapping, but continued to the mouth of the Green and then on up to Moab. In the winter of 1927 John Galloway and Dave Fraughten ran from Ouray and on up to Lockhart Canyon on the Colorado (Marston, 1955, 66; Marston, 1960, 294; U.S. y. Utah, 1931, Abstract, 284-307).

54. 1926 Todd, West, Page

On a vacation outing three Princeton men, W. B. Todd, M. O. West and F. L. Page, using two of the boats employed by the U.S. Geological Survey in 1922, ran down the Green from Green River, Wyoming to Jensen, Utah. One boat was abandoned in the Canyon of Lodore when it was pinned to a rock. Page and West left the trip at Jensen but Todd in the remaining boat went on to Green River, Utah, where the trip ended (Woolley, 1930, 54; Marston, 1955, 66).

55. 1927 Eddy

Clyde Eddy outfitted three boats using Powell's design and signed on Parley Galloway as boatman. The crew consisted of college athletes, a professional cinematographer, along with a tramp, a dog and a bear. Two boats were 22 feet long with a

five foot beam; the smaller boat was 16 feet long, four foot beam. In the interest of adventure the group ran the canyons from Green River, Utah, to Needles, California, arriving at the end of August.

One fruit of the expedition was Clyde Eddy's book Down the World's Most Dangerous River (1929) which reports the trip in detail.

56. 1927 Pathe-Bray

This party of professional motion picture photographers traveling in six boats left Green River, Utah, November 8, 1927, and ended their run in Grand Canyon (Marston, 1960, 304; Moab Times-Independent December 1, 1927).

57. 1927 LaRue-Clark, and others

E. C. LaRue and Owen R. Clark were members of a party of professional motion-picture photographers who travelled from Green River, Utah down through the Grand Canyon filming a picture entitled The Bride of the Colorado (The picture was never released).

Six Galloway-type boats were used. Four of the boats were 18 feet long with 5 foot beams and watertight compartments forward and aft. The other two boats were each 16 feet long, drawing 4-6 inches; one boat drew 9-10 inches when loaded.

The party left Green River, Utah on November 8, 1927 and completed their filming in the Grand Canyon in late November (U.S. v. Utah, 1931, Record, 1706-1758; Marston, 1960, 304).

58. 1928 Hyde

Glen R. Hyde built a Salmon River type sweep at Green River, Utah, and with his wife Bessie, shoved off on the Green on October 28, 1928. The pair cruised successfully through Cataract and Glen canyons and were last seen at Hermit Rapid in Grand Canyon. Their scow, but not the Hydies, was found downstream at a later date (Marston, 1960, 304; Woolley, 1930, 55).

59. 1929-1975 Hatch

Bus Hatch pioneered the tourist boating business on the Green and Yampa rivers in the 1930's (Evans and Belknap, 1973, 36). After boating Lodore Canyon in 1929 (Hatch, Interview, 1975), Bus Hatch, in 1931, with Frank Swain, C. L. Hatch and Royce Mowrey rode an open skiff through the upper canyons of the Green River to

Jensen, Utah (Marston, 1960, 295).

A similar run was made again in 1932 with Hatch, Mowrey and Swain. The boating adventure started at Chokecherry Draw and ended at Jensen, Utah. One boat was lost in Lodore Canyon (Marston, 1955, 66).

In 1933 Hatch, Swain, Mowrey, and C. L. Hatch ran the Green and Colorado rivers from Ouray, Utah to Lee's Ferry, Arizona.

In 1934, Hatch and Swain tested an experimental, but unsuccessful, boat made of marine plywood.

In 1936, Hatch and Swain were "piloting dudes" regularly on ten-day commercial trips between Green River, Wyoming, and Jensen, Utah (Marston, 1955, 67; Marston, 1960, 295). Today "Hatch River Expeditions," Vernal, Utah, now operated by Don and Ted Hatch, is one of the biggest outfitters in the upper basin. Hatch runs float trips on the Yampa River and the Green below Flaming Gorge, as well as the Colorado River and Grand Canyon. Breed (1954) reports a Hatch trip through Dinosaur.

60. 1932 Launer-Plummer

In September, 1932, Fred Launer, a Salt Lake furrier and Dr. Charles G. Plummer rode from Green River, Wyoming to Jensen, Utah, in a 16-foot Berger foldboat. Plummer walked along the bank and took pictures of Launer as he shot the rapids. The foldboat completed the passage without mishaps (Marston, 1955, 67).

61. 1936 Backus

In 1936 Anton R. Backus started through the Canyon of Lodore in a scow-type, partially-decked punt. He abandoned it at the first rapid in Lodore (Marston, 1955, 67; Marston, 1960, 295) where it may still be seen (Evans and Belknap, 1973, 31).

62. 1937-1938 Holmstrom

Haldane "Buzz" Holmstrom of Coquille, Oregon, became the first man to solo the canyons of the Green and Colorado rivers. Holmstrom made the trip from Green River, Wyoming, to Hoover Dam in the fall of 1937 (Marston, 1960, 295). After consulting with Bert Loper, among other knowledgeable river sources, Holmstrom built a sixteen-foot white cedar boat. The boat, based on the Galloway-Stone type skiff, had sealed compartments fore and aft. Amos Burg joined Holmstrom in 1938 and the two men hoped to boat from Green River lakes to the Gulf of California.

They were forced by shallow water to motor truck portage many miles into Green River, Wyoming. Philip Lundstrom joined them for the run to Jensen, Utah, and they added Willis Johnson at Green River, Utah, who went on with them to Boulder City. Burg introduced an inflated boat, the forerunner of the neoprene equipment now used so commonly by commercial river runners (Marston, 1960, 295; Moab Times-Independent, October 28, December 16, 1937; September 8, 1938; Case, 1938).

63. 1938 Clover-Jotter

In 1938, Norman Nevills guided a scientific party down the Green, embarking at Green River, Utah. The members were two University of Michigan botanists, Dr. Elzada U. Clover and Lois Jotter, W. C. Gibson, photographer and artist, Laphene "Don" Harris and W. Eugene Atkinson (Times-Independent, May 12, 1938).

The expedition left Green River, Utah on June 20, 1938 and arrived at Lee's Ferry on July 8. Harris left the party and Emory Kolb took his place (Times-Independent, August 4, 1938). The expedition ended in August at Boulder City, Nevada. The party travelled in three "sadirons" skiffs. One boat capsized in Cataract Canyon but all three boats made it to Lee's Ferry and beyond (Marston, 1960, 304).

64. 1938 Colmont-Seynes

In October, 1938 three young French kayakers travelled down the Green and Colorado rivers from Green River, Wyoming to Lee's Ferry. Their sixteen foot kayaks (Marston, 1955, 68) were made of linen fabric and rubber. Bernard de Colmont, his 22 year old wife Genevieve, and Antoine de Seynes had hoped to continue on to Boulder City but were forced to abandon the effort due to the cold December weather (Moab Times-Independent, October 20, December 18, 1938).

65. 1938-1939 Gardiner-Grant

Stewart Gardiner guided his kayak through Lodore, Whirlpool and Split Mountain canyons in 1938. A year later Gardiner made a similar run in the company of Alexander "Zee" Grant (Marston, 1960, 295-296).

66. 1939 Mann

Despite a series of mishaps, Charles F. Mann managed to guide his 14 foot 35 pound kayak from Green River, Wyoming, to Lee's Ferry. His boat was capsized several times and the fabric hull was torn in eight places by the savage water and rocks (Marston, 1955, 69).

67. 1940 Nevills

In a well-publicized commercial trip, Norman Nevills, June 20-August 23, 1940, ran the Green and the Colorado from Green River, Wyoming, to Lake Mead, using three cataract boats of the type he had developed on the earlier trips on the San Juan River (see under San Juan River). Senator Barry M. Goldwater, one of the passengers (he joined the trip at Green River, Utah) has published a detailed diary of the voyage (1970).

68. 1940 McConkie

Bishop W. R. McConkie and his son Wayne R. McConkie canoed from Green River, Utah to Moab (Moab Times-Independent, July 11, 1940).

69. 1942 National Park Service

A group led by Superintendent David Lanfield of Rocky Mountain National Park went down the Yampa and Green rivers from Sunbeam, Colorado to Jensen, Utah. The party, which also included scientists from the Park Service, the Smithsonian Institution, and the University of Colorado, was investigating the great beds of dinosaur bones in the area, and power and water use resources. Bus Hatch led the expedition (Denver, Rocky Mountain News, May 31, 1942).

70. 1946-1948 U.S. Geological Survey

From a point two miles above the Utah-Wyoming boundary a U.S.G.S. survey team in two skiffs with outboard motors ran the canyons to Green River, Utah. One boat then ran to the mouth of the Green, the other was carried to a point on the Colorado River 3 1/2 miles downstream from the Utah-Colorado boundary. This boat cruised down to the confluence, met the other boat and the two boated through Cataract and Glen canyons to end the run at Lee's Ferry in October, 1946.

In the spring of 1947 another run was made which started at the same place and continued to Green River, Utah. The boats were portaged to Moab and the party boated to Lee's Ferry. On September 10 another start was made at the same point and the boats were run to Green River, Utah, arriving September 20. At Ashley Falls one boat was lost but recovered. This run was supplemented by a trip from Hite to Lee's Ferry which ended on September 26.

In the spring of 1948 a short trip was made from the mouth of Henry's Fork to Little Brown's Hole. In September, 1948, two seven man inflated boats were run down to Jensen; portaging to Ouray, the trip was continued to the dam 8 1/2 miles above Green River, Utah (Marston, 1960, 294). The results of these trips are found in Thomas (1952).

71. 1947 Aleson-White

Harry Aleson and Georgie White took a neoprene boat from Green River, Utah, through Cataract Canyon to Hite, Utah (Marston, 1960, 305).

72. 1949 Nevills

In one of his last commercial boat trips Norman Nevills in June, 1950, conducted a party of 13, including five women, on a trip from Green River, Wyoming, to Jensen, Utah. The party rode in four cataract boats (Salt Lake Tribune, June 23, 1949; Rock Springs, Wyoming, Rocket, June 20, 1949).

73. 1950 Reynolds-Hallacy

In 1950, A. K. Reynolds and Mike Hallacy, commercial outfitters, ran a tour for photographic purposes from a point 60 miles above the head of Flaming Gorge to the upper end of Brown's Park. During the same year Reynolds-Hallacy ran a commercial trip through Red Canyon of the Green. Equipment consisted of a cataract boat, wooden kayak, and rubber landing barge (Sweetwater County Museum, Green River, Wyoming, Historical Files).

74. 1953-1975 White

Georgie White, one of the best known of the commercial outfitters, began running the rivers of the upper basin in 1953 and 1954. The only woman in the business she began running commercial trips in 1955 and was one of the first to popularize the use of inflated neoprene rafts. In 1955, she guided a single group of 30 people through the Grand Canyon, the largest party to go through up to that time. The Grand Canyon has been White's main interest but she has run the rivers of the upper basin as well. DeRoss (1967) who supplies this information, reports a 1957 run down the Green from Green River, Utah, to Lee's Ferry, and other voyages mainly in Grand Canyon. As of 1975, White is still "herding dudes," mainly through Grand Canyon.

75. 1954 Hallacy

Laphene "Don" Harris reported to Platt (1955, 94-95) that the only known attempt to go upstream through Gray and Desolation canyons was made on the Memorial Day weekend of 1954 by Mike Hallacy, formerly in the river trip business with A. K. Reynolds, of the Reynolds-Hallacy Expeditions in Green River, Wyoming. Hallacy was traveling in an aluminum boat equipped with a 15 horsepower outboard motor. The outfit was wrecked a short distance above the mouth of the Price River and the attempt was abandoned.

76. 1954 Hatch

In 1954, Bus Hatch, using a ten-man rubber raft powered by a 3 1/2 horsepower outboard, guided a private citizens' fact-finding group down the Yampa to the Green. The group was gathering data for a proposed dam (Brenneman, 1955; Denver, Rocky Mountain News, May 13, 1954).

77. 1955 Lange-Brier

Captain Dean Lange and airman Louis Brier, both of Lowry Air Force base, tried to run the Yampa in a boat they had made of airplane wing tanks. They wrecked their boats and were rescued by G. A. Newell. In 1955 the three men successfully ran the river in rubber boats (Denver, Rocky Mountain News, June 19, 1955).

78. 1955 Platt

In May of 1955, Kenneth B. Platt, Land Economist for the Bureau of Land Management travelled down the Green River from Mile 128.4 (Ouray, Utah) to Mile 8.5 (the irrigation diversion dam above Green River, Utah). The purpose of the trip was to collect data for Platt's Report on the Navigability of the Green and White Rivers in Utah (1955).

The party, lead by LaPhene D. Harris of Harris-Brennen River Expeditions, consisted of Platt, Evan L. Rasmussen and eight other men. Of the four motor boats used, three were of the deep-hull, high-bow design. Each was 15 feet in length with a 63 inch beam and a laminated fiberglass hull. The fourth boat was of the "cataract" design -- shallow hull, semi v bottom. Only food and minimum camp equipment were carried.

Platt continued his investigation of the river in October, 1955, by traveling down the river from the mouth of Split Mountain Canyon to the mouth of Spring Canyon, a small side drainage entering Labyrinth Canyon at Mile 66 above the confluence of the Green and Colorado Rivers.

The latter trip was made by Platt and Harris in a 14 foot war surplus 7 man rubber raft. A 5 h.p. outboard motor was used where the depth of the water permitted. The October trip lasted seven days (Platt, 1955, 36-41).

Platt's conclusions on navigability will be presented in this report in the section on reaches.

79. 1961-1975 Adventure Bound, Inc.

Adventure Bound, Inc., a commercial river-running outfit headquartered in Craig, Colorado, has floated the Yampa River commercially for 14 years. This company runs from Deer Lodge to the Split Mountain Campground on the Green within Dinosaur National Monument. According to Keith Counts (Interview, 1975), president of Adventure Bound, Inc., there are 18 other outfitters who float the Yampa River. Mr. Counts said his company uses only pontoon rafts.

80. 1969 Staveley

In 1969, on the hundredth anniversary of the Powell expedition, Gaylord Staveley, professional river runner, led a party riding hard-shell cataract boats from Flaming Gorge Dam down (by-passing Lake Powell by land) through Grand Canyon. An extended account of the trip will be found in Staveley (1971).

81. 1973 Zwinger

In 1973, Colorado naturalist, Ann Zwinger, gathering material for her book (1975) on the river, navigated the Green River from a point above the upper Green River Lake, near the head of the stream, to its confluence with the Colorado. The upper part to the head of the Canyon of Lodore was made by canoe. Portages were made around Fontenelle and Flaming Gorge reservoirs. From Lodore travel was by a commercial float trip.

82. 1975 Sandy Creek

Sandy Creek, Sandy River, or Big Sandy, is a perennial stream in Wyoming entering the Green River from the east.

There is some boating on the Big Sandy Reservoir, including small motorboats, sailboats, and canoes. The navigation on this reservoir is mostly for fishing. According to Ora Wright (Interview, 1975), a resident of Farson, Wyoming for over 60 years, the Big Sandy River itself has never been used for navigation. However, according to David O. Scott, Jr. (Interview, 1975), area manager Green River Resource Area, Bureau of Land Management, some persons do float the Big Sandy from Wyoming Route 187 to the Green River, usually in canoes, tubes or light rafts, because it is a shallow river.

1975 Recreational Boating

Since the 1930's, when Bus Hatch and Norman Nevills pioneered popular tourist runs on the rivers of the upper basin, recreational

boating has increased heavily and the Green River has come in for a big share of this activity. Since recreational boating on the Green and its tributaries is growing rapidly in volume, only the more recent activity will be listed below.

83. Above Flaming Gorge, Wyoming: According to Reed (Interview, 1975) there is much commercial navigation on the upper Green today near Pinedale, Wyoming. This includes fishing and hunting trips by motorboats, and float trips.

The Jackson Hole Ski and Sports Company, Jackson, Wyoming, floats the upper Green River commercially for fishing purposes. The company's advertisement in the Jackson Hole Guide, July 31, 1975, page 20, reads: "the Green is now floatable and spectacular trophy fish have already been caught by our floaters."

Len Benson, an outfitter from Saratoga, Wyoming, sells float trips down the Green River near Daniel, Wyoming. Benson divides the river into different length trips, and charges about \$35.00 a trip per person. He uses river flat boats with two passengers and one guide to each craft (Bill Baker, Interview, 1975).

Jim Evans (Interview, 1975) licensed guide and outfitter from Pinedale, Wyoming, sells commercial float trips on the Green from Green River Lakes, at the head of Green River, to Fontenelle Reservoir south of La barge, Wyoming.

Fontenelle Reservoir, built by the Bureau of Reclamation and completed in 1964, is big enough for sail boats and is a popular spot for waterskiing and fishing (Buck, Letter, 1975; Hangich, Interview, 1975).

Gail Preston at one time was a guide for fishing and pleasure excursions on the Green River near Big Piney, Wyoming. He had an outfitters license and owned a sports center in Big Piney (Lain, Interview, 1975).

According to Kaye Snodgrass (Interview, 1975) an employee of the Wyoming Game and Fish Commission in Pinedale, as of August, 1975; other outfitters who float the upper Green River commercially include: Vernon Bressler, Wilson, Wyoming; Jack H. Dennis, Robert S. Garrett, Jackson, Wyoming; Richard Miller, Pinedale, Wyoming. Some additional names of those who commercially offer "boat, float and fishing trips" on the Green River are listed in the Family Water Sports Big Wyoming brochure issued by the Wyoming Travel Commission (1975?).

In an interview (1975) James Lambert, Recreation Specialist, State Office, Bureau of Land Management, Cheyenne, stated that most commercial boating on the upper Green above Fontenelle

Reservoir is limited to that section of the river above the mouth of New Fork near Big Piney. Below the reservoir there is considerable traffic down to Flaming Gorge. Lambert advised that the BLM is just now developing procedures for controlling commercial use on the Green in Wyoming and as yet has no reliable statistics reflecting the extent of that use.

No effort has been made to collect data about recreational boating on Flaming Gorge Reservoir, a navigable body of water.

84. Below Flaming Gorge: Utah, Colorado, Utah. Below Flaming Gorge Dam the Green makes a great loop which carries it through Brown's Park in Utah and Colorado and thence through the Canyon of Lodore in Colorado. Picking up the Yampa River, the Green swings back into Utah and breaks out into the open country just above Jensen, Utah, in the Uinta Basin.

That section of the river between the dam and the mouth of Lodore Canyon is easy boating and quiet and popular with individual float fishermen, canoeists and the like. Below the mouth of Lodore the river runs through a series of canyons -- the lower Yampa flows through a canyon 45 miles long -- and this section, altogether within the boundaries of Dinosaur National Monument is the locale of intensive commercial boating today. Parties float the Green through Lodore, or, come down the Yampa and float on down the Green.

Statistics, for 1974, made available by the Bureau of Land Management (Use Statistics, March, 1975), Salt Lake City, reveal that the Green from Flaming Gorge Dam to Brown's Park was the locale of 2,160 user days (1973 total, 1,488), but in these figures no distinction is made between commercial and private use. For the Green and the Yampa in Dinosaur National Monument, for 1974, we note 34,091 user days (actually a decrease over 1973 and 1972). A total of 9,219 commercial passengers were carried through these reaches, representing 22,244 user days. As far as could be determined, commercial outfitters use inflated boats, neoprene rafts, etc. Approximately 14 commercial operators hold permits to run trips through these reaches of the Green and Yampa rivers.

85. Desolation and Gray Canyons. Across the Uinta Basin the Green pursues a meandering course and there is little commercial boating across this reach, but the run through Desolation and Gray canyons is a very popular tourist trip. Parties put in at Ouray, at the mouth of the White River, or at the mouth of Sand Wash, at the very head of Desolation Canyon. The run from Sand Wash to the usual point of debarkation 12 miles above Green River, Utah, is 84 miles. Figures made available by the Bureau of Land Management (Use Statistics, March, 1975) Salt Lake City, reveal

that in 1974 12,947 user days were recorded for this reach. Of these 8,820 user days were commercial trips. Thirty-eight commercial outfitters hold permits to operate in this reach and of these all but eight ran trips in 1974.

86. Below Green River, Utah through Labyrinth and Stillwater canyons there is a substantial amount of recreational boating but the only statistics we have are those which apply to boating through Cataract Canyon (see Colorado River, Recreational Boating).

In 1957, the "Friendship Cruise," and the "Canyon Country River Marathon" was organized by chambers of commerce and boating clubs in Green River and Moab, Utah, and the Canyon Country River Marathon Association was formed. For 18 years now the association has sponsored the 196-mile cruise -- open to anyone, bring your own boat -- which begins at Green River and ends at Moab. For some years a marathon race between the two terminal points was held and several classes of competition were posted. The association provides gas and rest stops and search and rescue assistance. The event occurs annually on the Memorial Day weekend when the water on both the Green and Colorado is high.

The brochure issued by the association in 1966 reveals that Pete Peterson of Grand Junction, Colorado, set a new record in the 196-mile marathon race. Time: 2 hours and 46 plus minutes, an average of 77 miles per hour over the course. A total of 410 boats registered for the cruise in 1959 (Salt Lake Tribune, May 18, 1959) which number, probably, has not been exceeded since. In the 1975 cruise Tom Wharton and Ron Brown took a novel approach with a home-made outrigger canoe, equipped with a 5.5 h.p. motor. They ran the 196-mile course in just three days (Salt Lake Tribune, June 10, 1975).

Wyoming. Running from north to south across the major, central emigrant trails, the Green River in Wyoming, posed a significant barrier to the American westward movement. During the early years before the coming of the railroad, overlanders reached the Green in June or July when the water was high, and crossing by some sort of ferry was necessary. Consequently, a good many people got into the business of running ferries. Most of these commercial ventures were not ambitious undertakings and some lasted but a single season, others longer. In many places throughout this reach of the Green the river is fordable in low water (late July through April) and this, of course, contributed to the transiency of the ferry business.

The following ferries were of some permanence. There were numbers of others but we have developed little information about them. They are listed, with the source of the information, following the data on the main ferries given below.

Mormon ferries operated from 1847 to about 1853. In the migration of 1847, the Mormons ferried themselves across the Green, but by the next year they had established a ferry service and by 1849 two Mormon ferries were operating. One was located just above the mouth of the Big Sandy on the Salt Lake road, the other was located near the Sublette Cutoff a few miles south of present La Barge, Wyoming, not far from "Names Hill." The Mormons were still operating on the Green in 1850, and possibly as late as 1853. In 1849 toll rates on the Mormon ferries were running from \$2.00 to \$6.00 per vehicle (Morgan, 1960, 52, 50-69; Arrington, 1958, 106; Brooks, 1963, 27; Chadey, 1973, 253; Linford, 1947, 111).

In ca. 1849-ca. 1850, a ferry was operated by some mountain men from Fort Bridger during the season of high water in Green River, for the accommodation of the gold-rush traffic over the Sublette Cutoff of the Oregon Trail. The ferry boat was made of four canoes lashed together to make a raft. The boat operated near Names Hill about six miles south of La Barge, Wyoming (Haines, 1973, 248).

Sometime in the 1860's the Robinson Ferry, located 3 1/2 miles below the Lombard Ferry which was near the mouth of the Big Sandy, was in operation. It was cable operated, the cable being hand made from the same materials as the 1861 trans-continental telegraph line (Chadey, 1973, 253; Bancroft, 1890, 696-697; Hayden, 1879, 704).

According to Bill Carr (Interview, 1975), a resident of the Big Piney, Wyoming, area since 1911, a ferry was operated 6 miles above Green River City during the 1860's. The ferry was located on the Milkbottom ranch.

A ferry operated across the Green River near the present site of Green River, Wyoming from 1862 to 1896 when a bridge was built across the river to replace it (Reynolds, Interview, 1975; Reynolds, 1962, 243). This ferry was first operated by Jim Baker, a trapper (Reynolds, Interview, 1975; Leckenby, comp., 1945, 40). A man named Hammond operated it next. Peter Appel was probably the last operator. The ferry was used as a crossing by the Overland Stage. The stage route came down Bitter Creek, crossed the river at the ferry, and went west by way of Telephone Canyon (Reynolds, Interview, 1975; Gilligan, 1939, 3; Green River Star, September 29, 1966; Appel, Interview, 1975; Chadey, 1973, 254).

One source claims that the ferry was operated for a time by C. Spinner, the man who discovered soda at Green River, Wyoming (Mortimer, 1925, 10).

The Holden Ferry, located just north of the Lombard Ferry (near the mouth of Big Sandy) was used to carry many herds of cattle, horses and sheep across the Green River. Long lines of covered wagons were ferried across the river at this site daily, each year from April to August. It operated from 1883 to about 1889. In the latter 1880's Holden sold his cable operated ferry to a man named Smith. Smith died soon after the sale (Holden, 1927, 58-61; Buck, Letter, 1975).

A ferry owned by William Hunt operated at the mouth of Slate Creek on the Green River above Green River, Wyoming. William R. Malonek carried mail from Green River City to Big Piney from ca. 1887 to ca. 1889 and used this ferry on his mail route (Pinedale, Wyoming, Roundup, January 24, 1928).

The Lombard, or Lumbard, Ferry, operating from ca. 1888 to ca. 1903, was one of the most important of the Green River ferries. It was located about two miles above the mouth of Big Sandy (Wilfong, Interview, 1975). Those using the Oregon Trail crossed the Green River on the Old Lombard Ferry (Johnson, n.d.; Carr, Interview, 1975). According to Bill Carr (Interview, 1975), a resident of the Big Piney, Wyoming area since 1911, the Lombard Ferry was operating in 1888 and wagon trains were still crossing on it. Eli Romain operated the ferry after Lombard for some time; it operated as late as 1903, he said.

In the Western History Research Center, University of Wyoming Library, Laramie, there is a blank printed billing form which gives us some precise information about this important ferry.

The following is a quote from the material contained on the billing form: "P.O. Granger, Wyoming. Mouth of Sandy, Sweet Water Co., Wyo., 189-. M-. To Mike Lombard, Dr., Proprietor of the New Ferry at the Mouth of the Sandy. Fully Equipped to Cross Anything -- Teams, Wagons and Live Stock." Chadey (1973, 253) refers to a ferry at or near the mouth of the Big Sandy operated by William Lombard.

The Case Ferry, in operation ca. 1892 - ca. 1896, was located just below the Fontenelle Reservoir on the Lincoln-Sweetwater County border. It was used by travelers going down the Big Sandy, and then following a variant of the old Oregon Trail. The ferry, big enough to carry a horse and buggy, was operated by a man named Case and was located on his ranch. Nellie Case, who lived on the ranch, stated that "at that time a good many Indians of the Washakie and Blackfoot tribes crossed on the Case ferry" (Case, 1936, 2; Wilfong, Interview, 1975).

During the 1930's a ferry operated at the Holmes Ranch, now under Flaming Gorge Reservoir (Ruble, Interview, 1975; Chadey, 1973, 254). A cable operated ferry existed on the Green River at the Brinegar ranch in Wyoming, ten miles north of the Utah line. It was used to transport truckloads of cattle feed across the river and was in use from ca. 1941 to about 1958 (Ruble, Interview, 1975; Chadey, 1973, 254; Purdy, 1959, 34).

A number of ferries in Wyoming have been referred to in the literature and in interviews but we have not attempted to locate them precisely. The references are given here. Reynolds (1962, 241) locates a ferry "30 or 35 miles" upstream from the present town of Green River (Reynolds, Interview, 1975; Chadey, 1973, 253). Louis Vazquez, before 1849, operated a flatboat ferry on the Green. Jim Bridger ran the ferry after 1849 when Vazquez left (Twitchell, 1959, 30; Vazquez, 1931, 107). Chadey (1973, 253) located a ferry at the Andersen Ranch crossing four miles below the Names Hill Crossing or about 9 miles below La Barge, Wyoming.

Karen Buck (1973, 256), secretary-treasurer of the Lincoln County Historical Society, states that at one time, "there were nine ferries operating on the Green River between the mouth of Stead Canyon and the Names Hill Crossing" (Buck, Letter, 1975).

According to Bill Carr (Interview, 1975), a long-time resident of the Big Piney, Wyoming area, a ferry was operated on the Green as an emigrant crossing 3/4 mile below Names Hill (five miles south of La Barge, Wyoming). Another ferry operated 1 1/2 miles north of Names Hill. Both of these ferries were on the Sublette Cutoff (see also Chadey, 1973, 253). Morgan (1954) has much data about ferries on the Green River during the 1850's, but few locations are given.

Utah. In 1912, Keith Smith of Linwood, Utah (now covered by Flaming Gorge Reservoir) built a wooden ferry boat to transport his sheep from the east side of Green River to the west side to reach summer range, for shearing and other purposes. Cable operated, the boat was located a mile above Henry's Fork. The ferry was replaced twice. The second was made from a bumblebee-infested scow discarded by the drillers who had made explorations for a dam at Flaming Gorge. Each ferry lasted six years. Smith stated that even with the ferry, the business of getting a herd of sheep across the river was an all-day affair. There was trouble with changing sandbars and occasionally a broken cable. In 1930 Smith built a bridge across the Green to replace the last ferry (Smith, 1968, 39; Larsen, Interview, 1975; Tinker, Interview, 1975; Woolley, 1930, 40).

Some 20 miles below Flaming Gorge Dam the Green River breaks out into an open valley extending for 35 miles from Utah into Colorado and ending at the mouth of the Canyon of Lodore. This historic valley, named after the French-Canadian trapper, Baptiste Brown, was an isolated place little known except to a few ranchers and outlaws on the run. Most of the activity in the place, legal and otherwise, written in detail by Burroughs (1962) was limited to the left, or northern side of the valley and there was little need, apparently, for any regular crossing service. However, during the 1880's and 1890's a black man by the name of Albert Welhouse, known familiarly as the "Speckled Nigger," operated a flatboat ferry across the Green River in the western end of Brown's Park at a point known as Parson's Ford (Burroughs, 1962, 49-50). Evans and Belknap (1973, 22) refer to a Parsons Cabin and a cable crossing at the mouth of Sears Creek, Mile 268 in Brown's Park. This is possibly the same site as the Albert Welhouse Ferry.

From ca. 1881 to ca. 1909, John Jarvie, Sr. ran a flat-bottom ferry boat across the Green River at his ranch in Brown's Park (Utah) located at Mile 274. Jarvie transported wagons, livestock, mail carriers (from Wyoming and Vernal), and travelers on his ferry, a boat secured by a cable and pulled across the river by hand. Jarvie ran the Brown's Park Post Office, Utah Territory, from 1881 to 1887. He also ran a store at his ranch until his death in 1909. Speck Williams operated the Jarvie Ferry in 1897 (MacLeod, Letter, 1975).

Utah-Colorado. Speck Williams also ran ferry boats across the Green River at the mouth of Willow Creek and on the west side of the mouth of Beaver Creek. The mouth of Willow Creek is just west of the Utah-Colorado line at Mile 263. The mouth of Beaver Creek is just east of the Utah-Colorado line between Mile 260 and Mile 261. It is not known when Williams operated these ferries (MacLeod, Letter, 1975).

Below Brown's Park, the Green plunges into the Canyon of Lodore in Dinosaur National Monument, and throughout the monument in Colorado and Utah until it reaches Split Mountain, the river is confined to canyons and there are no approaches suitable for ferry crossings.

Utah. Between the mouth of Split Mountain Canyon and the head of Desolation Canyon, the Green River for 75 miles follows a meandering course as it flows through the Uinta Basin. A number of ferries were established at several points along the reach and those of some permanence are discussed below. A few shadow ferries are listed at the end of the section.

John W. Powell (1875, 41), reporting his 1869 voyage wrote: "some years ago Captain Berthoud surveyed a stage route from Salt Lake City to Denver, and this is where he crossed the Green River. His party was encamped here, constructing a ferry boat and opening a road." The location of this ferryboat was near the mouth of the Duchesne River at Ouray, Utah. Nothing more on the Berthoud Ferry has been found.

Ferries near Jensen, Utah, were in operation from about 1882 to 1911. About 1882, Lars Jensen built the "Mau-be" Ferry probably located upstream a few miles from Jensen, Utah. Later it appears that the boat was moved downstream to a point near the mouth of Ashley Creek. The picture becomes a bit confused when the son, Jens Jensen, apparently put into operation another ferry somewhere in the vicinity of Jensen. One of the Jensen ferries was destroyed by an ice jam in 1908 but was replaced in the same year. In a letter (1960) Jens Jensen wrote that his boat was 12 feet wide and forty feet long and carried sheep, cattle and wagons. At low water the boat would stall in the river. When the highway bridge at Jensen was built in 1911 ferries in the vicinity were put out of business. (Stewart, Interview, 1975; Evans and Belknap, 1974, 12; Remington, 1959, 233-234; Monson, Interview, 1975; Daughters of the Utah Pioneers, 1947, 63, 77, 415; Jensen, Letter, 1960; Banks, Letter, 1960).

It appears from the record that another ferry was in operation in the Jensen area from a date before 1883 to 1911, but it has not been precisely located. This ferry, established at the Burton Farm, was bought in 1883 by Shipsey Johnson who sold it in 1885 to Hugh and Albert Snow. It operated until 1911 (Daughters of the Utah Pioneers, 1947, 63, 286; Snow, 1962).

The Alhandra Ferry, about eight miles below Jensen, Utah, at Mile 173 (Evans and Belknap, 1974, 12-13) operated from ca. 1906 to ca. 1936. It was constructed by the Uintah Railroad Company and named after an Indian chief Alhandra (Stewart, Interview, 1975).

The Uintah Railroad Company was an offshoot of the Gilson Asphaltum Company. This ferry carried the freight from the Uintah Railroad across the Green River and then it was carried by stage to Vernal, Utah. The railroad had a mail contract and it carried both mail and passengers to the Alhandra Ferry and then on to Vernal. According to George E. Stewart (Interview, 1975), this ferry was also used by other persons who paid the fare to cross on it. A stagecoach and four horses could be carried on the boat (Daughters of Utah Pioneers, 1947, 262; illustration in Evans and Belknap, 1974, 11).

One source states that the Alhandra Ferry was ten or twelve miles below Jensen, Utah, and was built by the Uintah Toll Road Company, subsidiary of the Uintah Railway Company, to provide a more direct route from Dragon, Utah to Vernal. The ferryman was Bob Johnson (Remington, 1959, 234, 277). James McNaughton was the first regular ferryman at the Alhandra crossing (Daughters of the Utah Pioneers, 1947, 271).

This ferry was also used extensively as a crossing for sheep herds. It was located on the Uintah Railways stage route which connected with the Denver and Rio Grande Western Railway (Remington, 1959, 225, 275).

A ferry at Ouray, Utah, operating from about 1911 to about 1930, was built by the Uinta Toll Road Company, a subsidiary of the Uinta Railway Company, as a connecting link in the road from Dragon, Utah (southeast of Ouray, Utah near the Colorado border) to Fort Duchesne, Utah (Remington, 1959, 234).

This ferry was in operation in 1911. It was later sold to the Bureau of Indian Affairs which ran it for the benefit of the local Indians. George E. Stewart (Interview, 1975) said this ferry was operating in 1914. It was large enough to carry horse-drawn stagecoaches and freight wagons (Gross, 1972, 26). According to Evans and Belknap (1974, 18, illustration) the Ouray ferry was operating as late as 1930.

Stewart's Ferry, in operation from 1914 to 1924, was located on the Green five miles below Ouray, Utah. It was used for general commercial purposes and by sheep men crossing herds from summer to winter range. George E. Stewart, Sr. and Henry "Hank" Stewart operated the ferry. It was also used for transporting buggies, freight wagons, horses, and cattle across the Green (Stewart, Interview, 1975; Seeley, Letter, 1960).

A ferry owned by sheepmen operated on Green River between Four Mile (near Mile 106) and Sand Wash (at the north end of Desolation Canyon) from about 1890 to about 1912. This boat was

used to ferry sheep across the Green and was not commercial (Stewart, Interview, 1975).

From ca. 1896 to ca. 1900, a ferry known as the "Get-away" operated near the mouth of Chandler's Canyon in Desolation Canyon. It was just large enough to carry two horses and outlaws used it to make their getaway. Anyone in pursuit would have to swim across and recover the boat (Stewart, Interview, 1975).

The Sand Wash Ferry, located on the Green River at the northern end of Desolation Canyon, was used commercially as a sheep crossing. Henry "Hank" Stewart, who put the ferry in operation in 1923, sold it to Charles Sands who in turn sold it to Ray Thompson. Thompson operated the ferry until the practice of trucking sheep began to replace herding sheep cross-country (Stewart, Interview, 1975). This site was a popular crossing, as it provided good access for livestock using the high country to the west in summer and wintering in the eastern part of the Uinta Basin. Because of declining use the ferry was abandoned when spring floods broke the cables in 1952 (U.S. Bureau of Land Management, Running the Green River, 1974; Evans and Belknap, 1974, 23, illustration).

Through Desolation and Gray Canyons the Green River is confined by canyon walls for 84 miles. Emerging from Gray Canyon twelve miles above Green River, Utah, the stream flows through the open Gunnison Valley for about 30 miles before it enters Labyrinth Canyon.

The Old Spanish Trail, a caravan route between Santa Fe and Los Angeles, 1830-1850, crossed the Green River at the point where the town of Green River is now located. At low water the river at this place could easily be forded and the crossing was used extensively by traders, government explorers, Indians and others long after 1850. In 1882, the Denver and Rio Grande Western Railway put a bridge across the Green, downstream less than a mile from the old ford.

The coming of the railroad gave rise to a settlement first called Blake, and later, Green River. One of the first settlers was Thomas Farrer, who about 1879 put in what, apparently, was the first ferry at Green River. The ferry was located at a point below the old ford, and the present highway bridge, and above the railroad bridge.

Apparently this ferry operated until 1890, when a son, J. T. Farrer, purchased a new cable operated ferry from a firm in Oregon. Farrer felt the old ferry was inadequate for the increasing travel from points north in Utah into Moab or to Colorado. One account indicates the new ferry was capable of

hauling at least four men, three horses, and nine head of cattle. The ferry continued in operation until a highway bridge was built in 1910 (Baker, Letter, 1975; McElprang, 1949; U.S. Work Projects Administration, Utah, 1940, 399-400; Salt Lake Tribune, October 8, 1946; Pearl Baker, Interview, 1975).

Robert Hatrich operated a ferry across the Green River just above the Green River Bridge. The Hatrich Ferry was capable of carrying twenty horses at a time. In 1884, Hatrich crossed over 400 teams and 800 cattle. (Salt Lake Tribune, April 26, 1885).

The ferry was apparently still in operation in 1887 as a reporter mentions using it to cross the river (Salt Lake Tribune, July 16, 1887).

Pearl Baker, local historian and author of at least three books on the canyon lands region, in an interview (1975) stated that there were no other ferries in the Gunnison Valley, and none along the Green downstream to the river's confluence with the Colorado.

GREEN RIVER TRIBUTARIES

88. Black's Fork

Black's Fork, a major tributary of the upper Green, heading in the Uinta Mountains in Utah, was used for navigational purposes intermittently from 1850 to about 1934. This involved Smith's Fork, a tributary also heading in the Uintas, and Ham's Fork, a major tributary heading in Wyoming northwest of Kemmerer.

During the years from about 1892 to about 1934, there were some logging activities on Black's Fork. The Standard Timber Company with headquarters in Evanston, Wyoming, sent railroad ties down both Black's Fork and Smith's Fork, a tributary of Black's Fork (Kvenild, 1963, 256). Ties were placed in the river on the West Fork of Smith's Fork above Hewinta Guard Station, at points in Utah, some miles south of the Wyoming border. Then in the spring, when the water was high, the ties were floated down Smith's Fork into Black's Fork to Granger, Wyoming. Ties were placed in Black's Fork, at points in Utah six or seven miles south of the Wyoming border. It took a month to six weeks to float the ties from the headwaters of both forks to Granger (Wall, Interview, 1975) where the ties were then pulled out of the river at a tie boom (Dahlquist, Interview, 1975).

According to Vella C. Jackmann (Interview, 1975), a long-time resident of the Mountain View, Wyoming area, the last year of logging activity on Black's Fork was 1916. The last drive down the West Fork of Smith's Fork was in 1934 or 1935. The earliest mention of logging on Black's Fork was in 1892. At that time Coe and Carter, tie contractors for the Union Pacific Railroad, were operating the tie camp on Black's Fork. Charles P. Robbins, 1848-1941, a relative of Mrs. Jackmann, stated in his autobiography: "On January 6, 1892, I came to Coe and Carter's tie camp on Black's Fork, Uinta County, Wyoming. I went to work cutting and hauling ties to Black's Fork, to be floated to the railroad. I worked at that for four or five years. Then George Lamb and I built a saw mill on Smith's Fork, first mill in Bridger Valley" (Robbins, 1935, 4).

Joe Rassmussen (Interview, 1975) said that his father used to sell potatoes to the workers at the tie camp near the Meeks Cabin Reservoir on Black's Fork, and in 1910 they were still floating ties down the river.

According to Holmer West (Interview, 1975), a resident of Granger, Wyoming for over fifty years, the Union Pacific Railroad

built a spur (a track 300 to 400 yards long) to the Black's Fork River where the ties were loaded on railroad cars. He said that for many years the ties were hand-hewn. Later a sawmill was constructed at Granger to cut the ties.

According to Oscar Dahlquist (Interview, 1975) a ferry operated during high water on Black's Fork above Fort Bridger during the 1800's. This ferry was located on the overland stage and Pony Express route, said Dahlquist.

Ham's Fork was also the scene of considerable navigational usage. Emigrants heading westward found it necessary to cross Ham's Fork, usually by fording but we find this mention of an early ferry. In May 1850, George Keller, a physician, wrote in his journal: "Next day eighteen miles travel brought us to Ham's Fork of Green River. This we found impossible to ford, on account of its swollen state. Next day was spent in getting logs from the mountains, and constructing a ferry. Next morning the ferry was launched, the ropes arranged, and in a few hours everything was safely landed on the opposite bank. This stream is about fifty feet wide and six feet deep. Later in the season it is much shallower" (Antilla, 1975, 131, 132). Morgan (1954, 160-162) reports a Hawley's Ferry on Ham's Fork which was built by one Hickman and (Benjamin?) Hawley in May, 1854, no location given.

Log Drives on Ham's Fork were of some importance. In 1881, Charles P. Robbins, took a contract to cut and float ties down Ham's Fork from Elk Creek, probably to Kemmerer, Wyoming, where they were used in the laying of the Oregon Short Line Railroad track (Robbins, 1935, 4). The Short Line was built from Granger, Wyoming to Huntington, Oregon.

The next recorded log drive on Ham's Fork was in 1899 when S. (Sim) Westfall secured a contract for a log drive on upper Ham's Fork for the Diamondville Coal and Coke Company for (mine) ties (Antilla, 1975, 135). According to Joe Kaydas and Gust Peterson (Interviews, 1975), long-time residents of Kemmerer, Wyoming, the Kemmerer Coal Company every spring from about 1900 to about 1921 floated ties and logs from headwaters areas down to Frontier where they were pulled out at a sawmill. The logs were used as props in the Elkol, Sublette and Frontier coal mines owned by the company. Logs and ties were also shipped for use in the mines at Rock Springs, Wyoming (Kaydas-Peterson, Interviews, 1975; Hangich, Interview, 1975; Antilla, 1975, 87).

In 1911 there were 91,000 ties and props in the log drive on Ham's Fork. The last log drive on Ham's Fork was probably in 1921 (Antilla, 1975, 136-137). According to the Rock Springs, Wyoming, Miner, July 2, 1920, forty thousand logs valued at 75

cents each reached Frontier, Wyoming, from the head of Ham's Fork.

The Viva Naughton Lake on Ham's Fork, above Kemmerer, is about three miles long and 1 1/2 miles wide, and has a marina. Motorboats navigate the lake for fishing and waterskiing. According to Martin Hangich (Interview, 1975), who has lived near Kemmerer 65 years, navigation does not take place on Ham's Fork today because the river is too shallow for float trips and in the spring, when the water is high, the fishing is bad.

89. Henry's Fork

According to Mrs. Jim Gregory (Interview, 1975), long time resident of Lonetree, Wyoming on Henry's Fork, there never has been navigation on this river. People do set traps along the banks of Henry's Fork but this is done primarily by horseback.

During the spring runoff season, the river is wide and swift, but remains too shallow for navigation throughout the rest of the year (Washburn, Interview, 1975; Gregory, Interview, 1975).

90. Yampa River

The Yampa River, a major tributary of the Green, heading in the central Rocky Mountains, was used for navigational purposes quite intermittently from 1913 to 1975. The items reported below are independent of those trips made by boating parties who started out on the Yampa and finished on the Green (see listings under Green River).

1891 Ferries

The Craig Pantagraph, April 3, 1891, reported that newly constructed ferries on Williams Fork and Bear River (Yampa River), connecting Craig with Meeker, were running smoothly. Mail arrived at Craig three times a week.

1913 - ca. 1927 Logging

The Sarvis Timer (or Lumber) Company of Nebraska had a logging camp and cut timber on Sarvis Creek about 20 miles above Steamboat Springs, Colorado. The logs were floated down a flume parallel to the creek and splashed into the Yampa. During high water, they were then floated down the river to the saw mill about two miles above town. Lumber cut from the logs was shipped to markets wherever found. Denver was one of the biggest markets. At one time there were as many as fifty employees working for this company (Monson, Interview, 1975; Nay, Interview, 1975).

1928-1929 Denver Post

Between August 19 and September 4, 1928, the Denver Post sponsored a run down the Yampa River. This was regarded at the time as the "first" exploration of the Yampa. The party included A. G. Birch, leader of the expedition; Bert Moritz, Fred Dunham, and Charles E. Mace, the photographer. Two boats, each 16 1/2 feet long and 4 1/2-foot beams were used, the Leakin Lena and the Prickly Heat. One boat was torn to pieces on the rocks and the other boat, and the expedition, was abandoned near Castle Park (Marston, 1955, 66; Evans and Belknap, 1973, 50-59). The Denver Post, October 29, 1929, reported that since the Post's expedition of 1928, four men had lost their lives in the Yampa trying to duplicate the feat (Marston, 1955, 66).

1930's Logging

Elk Creek, ten miles below Steamboat Springs, in the 1930's was the locale of a logging operation. One Dan Stuckey floated logs down the creek to its mouth where he operated a sawmill. The operation did not prosper and it lasted only a few years (Monson, Interview, 1975; Powell, 1972).

1944 Hatch-Orr

In 1944, Bus Hatch and Jim Orr attempted to run the 3 1/2 miles of rapids in Cross Mountain Canyon, fifty miles west of Craig, Colorado, on the Yampa. A rubber boat and a "specially made boat" were used on the expedition. However, they wrecked in the attempt to navigate the river and narrowly escaped death (Steamboat Springs, Colorado, Pilot, June 6, 1944).

1957 Worm

In 1957, Forest Worm, his wife, and ten friends ran the Yampa River in Dinosaur National Monument in two rubber boats. The expedition which began on June 28 soon ended when they lost both boats at Teepee Rapids, a few miles from the point of embarkation (Denver Post, June 18, 1958).

1973-1975 Mountain Craft Company

Mountain Craft of Steamboat Springs, Colorado, floats the upper Yampa River commercially. According to Dan Gabryszak, the river guide, the company is the only commercial river running outfit that floats the Yampa River above Dinosaur National Monument. Mountain Craft floats from Steamboat Springs to Hayden, Colorado - about thirty miles by river - from April to

mid-July. A one-day trip costs \$20.00 per person. Mountain Craft also floats the Colorado River and charges \$27.50 per person per day. Mr. Gabryszak said they have run the Colorado for two years (Gabryszak, Interview, 1975).

1974 Yampa River - Cross Canyon

The first successful run of Cross Mountain Gorge (west of Maybell, Colorado), a five mile canyon near Dinosaur National Monument on the Yampa, occurred in 1974. Alan Eason, Rob Wise, and Rocky Innes navigated the canyon on May 29, 1974 in a 22-foot pontoon raft. The canyon had long been considered impassable by the National Park Service. The event was witnessed by a group of thirty people. The three boatmen, all from Denver, Colorado, have worked for Adventure Bound River Expeditions in Craig, Colorado, as licensed river guides. This information is found in a display in the Moffatt County Museum in Craig, Colorado.

We have heard reports that Jack Foster and G. H. Pitner navigated Cross Canyon in 1945 or 1946 but these have not been confirmed.

1975 Floatboating

In a letter dated October 14, 1975, Raymond G. Evans, Bureau of Land Management, Craig District Office, Craig, Colorado, stated that above Dinosaur National Monument, there is an undetermined amount of floatboating on the Yampa, as well as the Elk River, a northern tributary. At present BLM has no permit system for the use of these rivers and there is a paucity of data about the extent of use and commercial operation.

91. Duchesne River

The Duchesne River drains the Uinta Basin in Utah.

Owen Smith operated a ferry boat across the Duchesne for a few months during 1910 while a new steel bridge was being built. The ferry operated during the high water season for passenger service only. It was located at Myton, Utah (Stewart, Interview, 1975).

Matt Uresk owned a cable ferry below Myton, Utah, on the Duchesne. It was not used commercially. Uresk had a cattle farm on both sides of the river and he used the ferry as a crossing for his livestock. The ferry operated around 1924 or 1925 (Stewart, Interview, 1975).

92. White River

The White River, an eastern tributary of the Green, heads in Colorado and reaches the main stream at a point near Ouray, Utah.

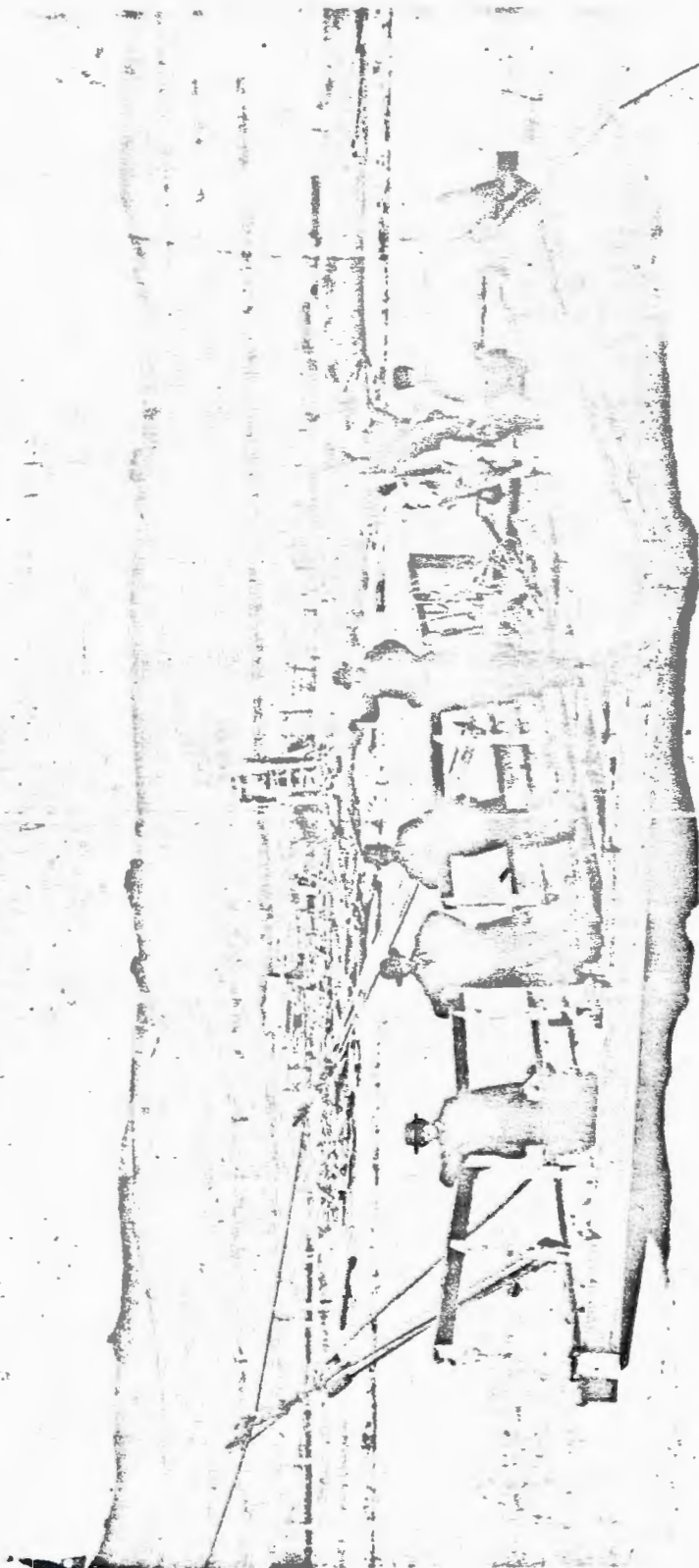
According to Richard G. Lyttle (Interview, 1975), former publisher of the Meeker Colorado Herald, an early Indian agent named Danford (or Danforth), about 1870, cut logs near Buford, Colorado, and floated them down the White River to put up buildings at the White River Indian Agency, nine miles east of Meeker, Colorado. There were no roads up the river and floating the logs proved to be the easiest way to transport them.

A flat-bottom ferry, made of logs, operated on the White River around 1884 and 1885. The ferry was located near the present site of Stagecoach Motel, two miles west of Meeker, Colorado. According to Dorothy Herring (Interview, 1975), curator of the White River Museum, Meeker, Colorado, this ferry was publicly used. People traveling to and from Denver and Leadville, Colorado, used this ferry to cross the river. Mrs. Herring said her father personally crossed over the White River on it, but she does not know what the fare was.

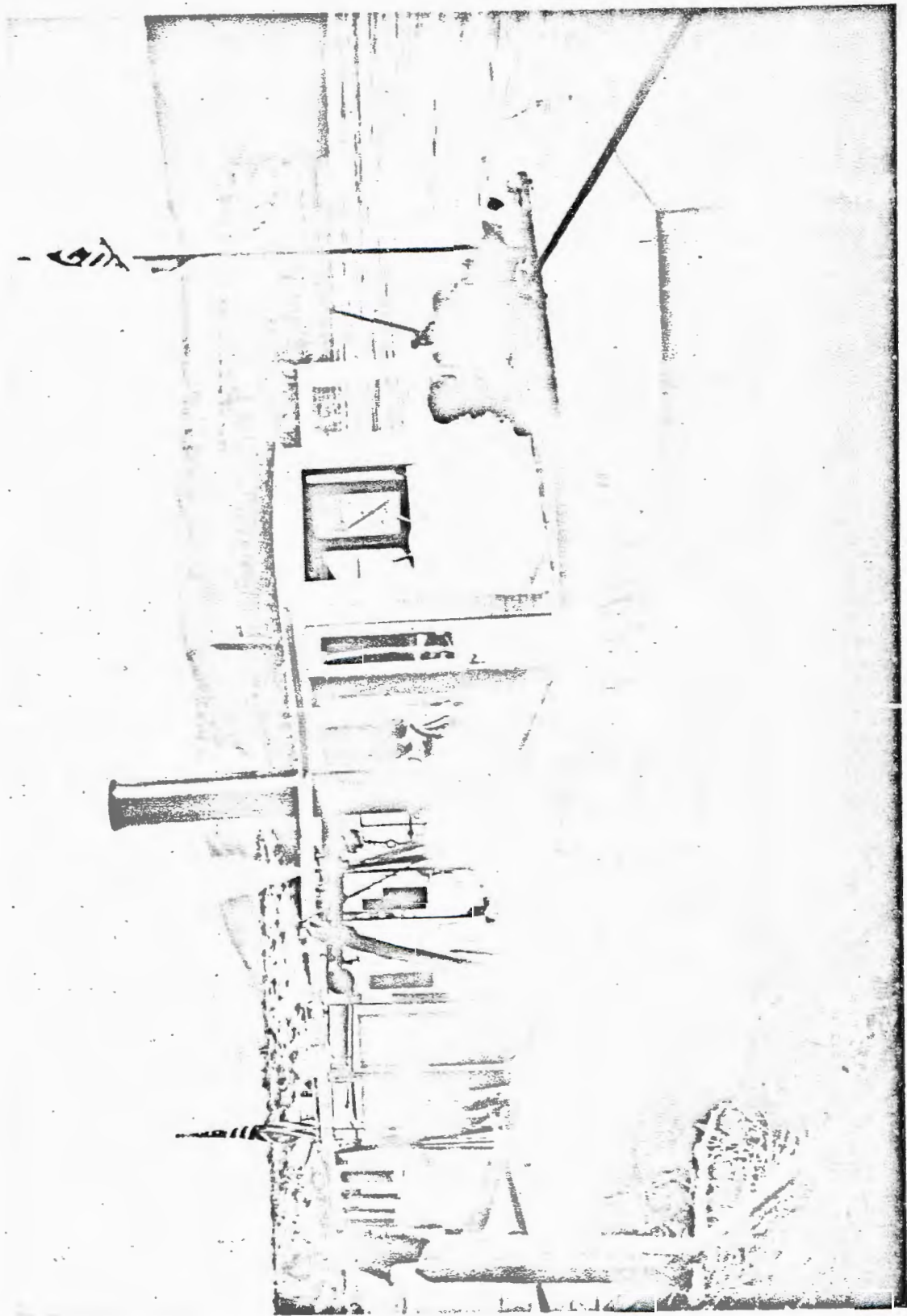
J. H. Cotharp used the White River to transport spruce logs he had procured for the construction of his log cabin at Rangely, Colorado. The logs were cut up on Spring Creek and floated down the White River around 1887 (Gross, 1972, 40).

In a letter dated October 14, 1975, Raymond G. Evans, Craig District Office, Bureau of Land Management, Craig, Colorado, stated that there is some floatboating on the White River but the amount of this activity has not been determined. No permits are required by the BLM to float the river.

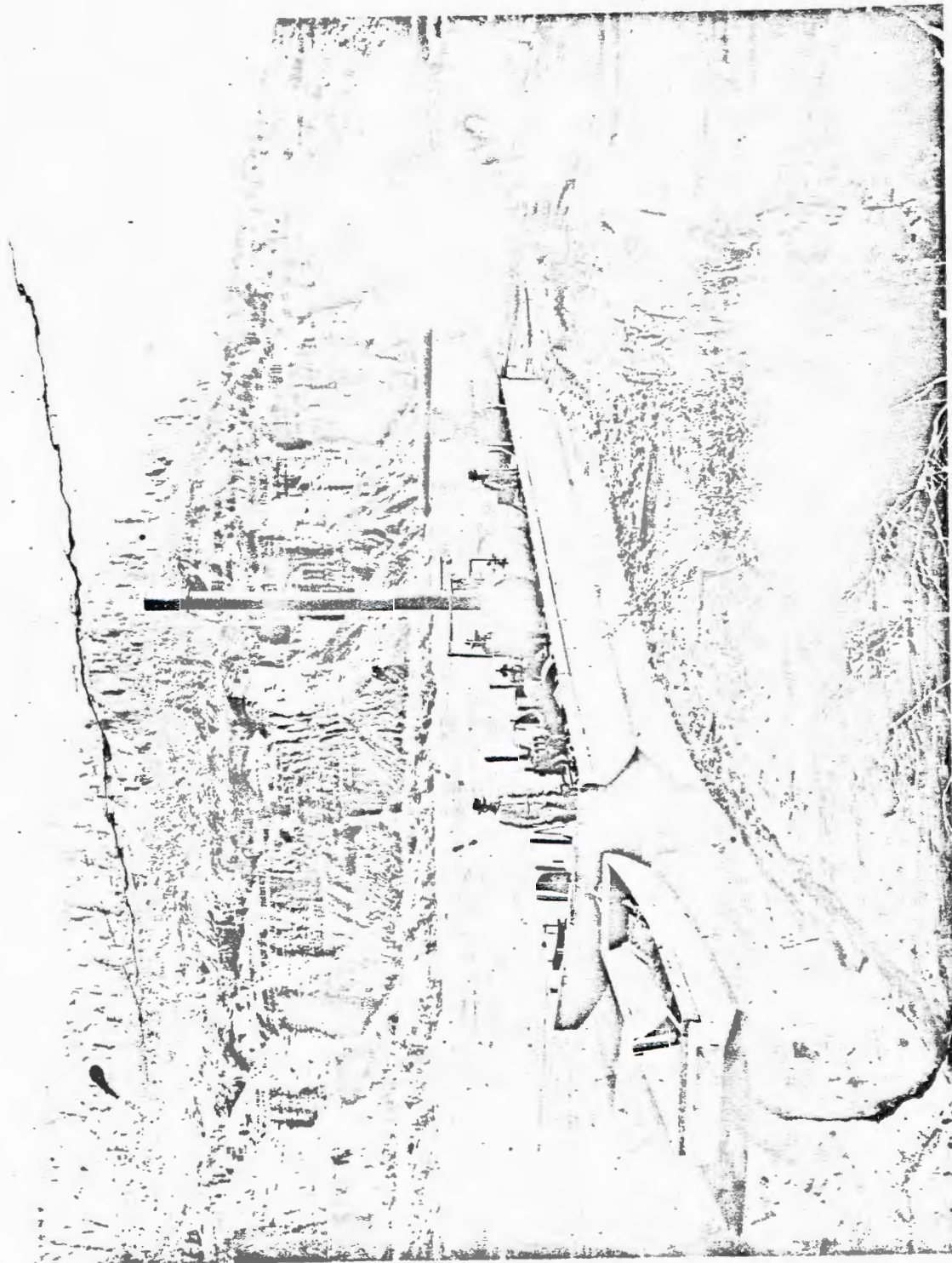
Platt (1955, 101) could find no record of any attempt to use the White River with boats in Utah.



The Peter Appel Ferry on the upper Green River.
Courtesy Dr. Walter K. Appel, Cheyenne, Wyoming.



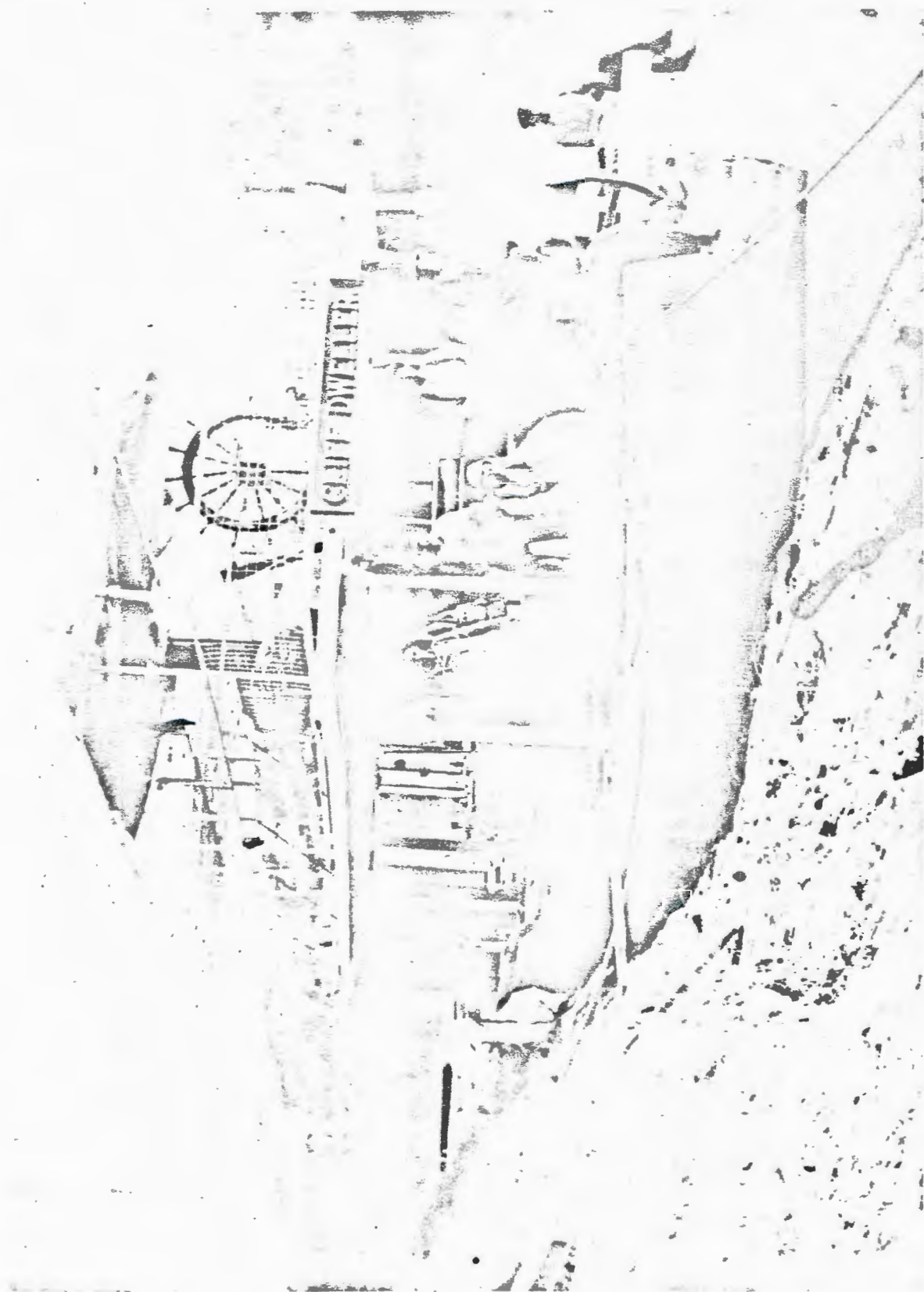
The Comet on Green River, 1908.
Courtesy Sweetwater County Historical Museum,
Green River, Wyoming.



Placer mining boat on San Juan River.
Courtesy Billie Williams Yost.



The Canyon King on Colorado River.
From Desert Magazine (c).



The Cliff Dweller on Green River.

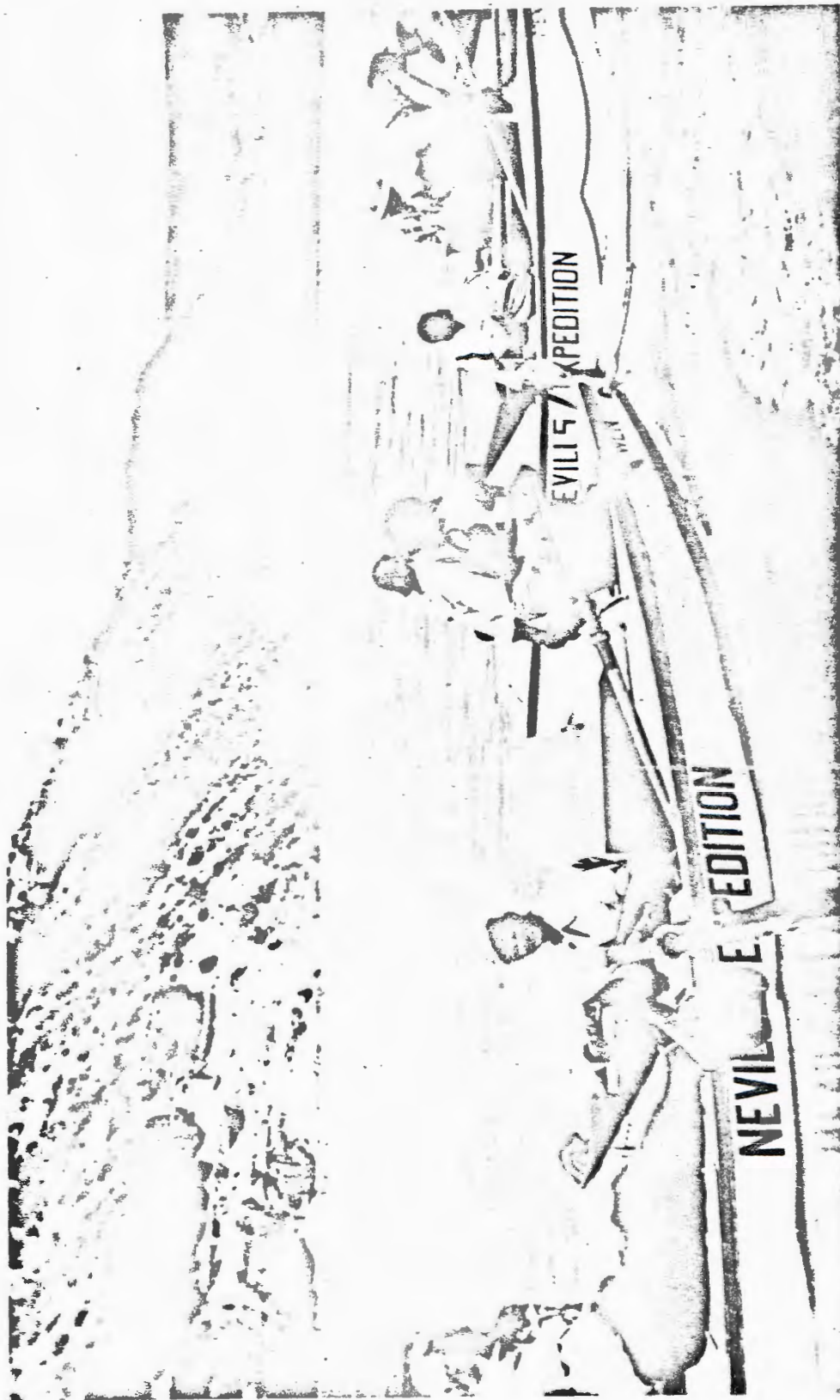
Courtesy Green River, Utah, Public Library.



Power boat in Cataract Canyon.
C. Gregory Crampton.



Hatch River Expeditions rafts in Cataract Canyon.
C. Gregory Crampton.



Nevills expedition on the upper Green River, ca. 1940.
Courtesy Sweetwater County Historical Museum,
Green River, Wyoming.



Grand division of the Colorado River basin

CHRONOLOGICAL SUMMARY OF
NAVIGATION ON THE COLORADO RIVER

The volume of navigational use of the Colorado, at least until the boom in recreational boating that followed World War II, has been substantially less than that on the Green River. The reason for this is fairly obvious. The Green at two points - Green River, Wyoming, and Green River, Utah - was crossed by transcontinental railroads, the Union Pacific from 1869 in the former, and the Denver and Rio Grande Western from 1883 in the latter. Transportation of boating equipment for use on the rivers, and the commercial transport of any freight carried on the river, was thus facilitated. Although the D&RGW did follow along the Colorado River to Grand Junction and beyond for some distance, access to the main stream by boating parties bent upon running the river through Cataract and Glen canyons, was shorter and far easier from Green River, Utah.

And, of course, the building of the D&RGW, which followed the Colorado River through western Colorado, provided the means for carrying most commercial freight in the Colorado River Valley in Colorado, and the subsequent building of a branch line up the Gunnison and Uncompahgre rivers, provided a freight route for these valleys.

Several informants interviewed had no knowledge of any commercial navigation, past or present, interstate or otherwise, on the Colorado River in Colorado. These informants were Rowley (1975), resident of Palisade since 1905, Sisson (1975), resident of Palisade since 1935, Sellars (1975), resident of Grand Junction since 1924, and Chambliss (1975), President of the Green Belt Board, an organization whose purpose is to preserve the Colorado River and make it accessible and usable.

Certain it is that we have record of very few voyages beginning at points in Colorado and continuing down into points in Utah; that is, before the advent of recreational boating.

93. 1869 - 1975 Glen and Narrow Canyons

Glen Canyon, save for the fifteen miles below Glen Canyon Dam, and Narrow Canyon, are now inundated by the waters of Lake Powell. These reaches of the Colorado from the time of the first Powell voyage in 1869 to the completion of Glen Canyon Dam in 1973, were the scene of much boating, both recreational and commercial. The history of this navigation to 1929 was developed completely by witnesses in the "River Bed Case," *U.S. v. Utah* (1931). The decision in that case was that the Colorado through these reaches was declared to be a navigable stream, at least that portion of it in Utah.

With the closing of the gates on Glen Canyon Dam, Lake Powell began to form and eventually created a reservoir extending from Arizona into Utah and inundating the most of Glen, all of Narrow, and much of Cataract, canyons. Since Lake Powell is a navigable lake we have in this research not attempted to synthesize the large amount of material relating to navigation through these reaches of the Colorado. However, we have included data on those voyages which began above the confluence of the Green and Colorado and came on down through Cataract Canyon to Narrow and Glen canyons.

Virtually all traffic through Cataract Canyon, which in the celebrated *U.S. v. Utah* (1931), was judged to be non-navigable, originated either on the Green or the Colorado above the confluence. These usages have been listed in this report either under the Green or Colorado rivers and they will be brought together under the heading of Cataract Canyon in the section on reaches.

That section of Glen Canyon in Arizona, fifteen miles of which is below Glen Canyon Dam, is still a free-flowing river. A very great deal of the evidence taken in *U.S. v. Utah* (1931) did relate to the navigation of this reach since many trips and voyages in Glen Canyon in Utah either began or terminated at Lee's Ferry, Arizona. However, the court in this case did not consider the navigability of the Colorado below the Utah - Arizona line. The navigational history of that reach of the Colorado, beyond reference to those voyages listed under the Green and Colorado, has been summarized in a recent book by Rusho and Crampton (1975, 84-91) as follows:

In the years after World War II Glen Canyon was run extensively by recreational boaters. During the years from 1946 to 1956, the lower part of Glen Canyon, and Lee's Ferry, the terminal point for most trips, was visited by

more people than at any other time in its history. After 1956, boating through the damsite was prohibited, so Glen Canyon voyagers left the river at Kane Creek in Utah, forty miles upstream from Lee's Ferry, and as a consequence, river traffic below the damsite practically ceased.

In Glen Canyon some of the first paying passengers were customers of Art Greene, who began making occasional boat trips from Lee's Ferry to Aztec Creek, the access point for Rainbow Bridge, this in the mid-1940's.

Green's early trips were made in a tiny, thirteen-foot rowboat powered by a twenty horsepower outboard. After the war he increased the size and the number of his boats, but he kept his operations simple. If a motor developed bad trouble he simply drifted back to Lee's Ferry. Whenever he chanced upon another river runner, all of whom were well-known to Greene and his family, it was common to make camp then and there, so that the friends could "swap lies." Schedules were almost non-existent. Art just told his customers that he would take them to Rainbow Bridge and back and that it would take "up to a week."

To avoid trouble caused by hidden sandbars and rocks, Greene experimented with an air-driven boat powered by an airplane engine and propeller mounted on the top deck. After trying a few smaller engines he finally settled on a huge 450-horsepower Pratt and Whitney "Duster" engine that he put on the boat in 1952.

One big problem was that the engine burned great quantities of gasoline, so much that cans of gasoline had to be placed in advance at certain places beside the river. From the visitor's point of view, however, the major drawback was the terrible noise of the engine. Earplugs and cotton were standard issue to all guests and crew. To communicate while enroute, Art tried a hose with funnels at each end, but that didn't work. He finally gave everyone a pencil and note pad for important messages. As Art "Bill" Greene, Jr. said, "You couldn't hear for a week after one of those trips."

In spite of its drawbacks, Art's air boat performed beautifully. In very shallow water, for instance, it seemed to rise up on its own "pressure wave." Frequently the boat would lurch slightly and those on board could look back and see grooves cut through a sandbar. In

optimum conditions the boat could reach a speed of fifty-five miles an hour. Greene operated the air boat until 1960, running short trips from Lee's Ferry to the damsite. Using power boats he continued this service until 1963.

In 1967, the Fort Lee Company, Tony Lee Sparks of Page, Arizona, owner, acquired from the National Park Service the concession at Lee's Ferry. Soon thereafter, Sparks initiated a popular daily float trip from Glen Canyon Dam down to Lee's Ferry and these continue to the present time. Permits to operate these trips are granted by the Bureau of Reclamation. Figures released by W. L. Rusho, Public Information Officer, Bureau of Reclamation, Salt Lake City, reflect the following: In 1971 through this reach the Fort Lee Company carried 300 passengers; 1972, 740 passengers; 1973, 1,500 passengers; 1974, 2,725 passengers, and up to September 25, 1975, 2,120 passengers.

In addition to the float trips, the Fort Lee Company rents boats to recreationists going upstream to Glen Canyon Dam.

94. ca. 1879 - 1905 Richardson

In Daughters of Utah Pioneers, Grand County, Utah, Grand Memories, 136-137, a brief paragraph states that in the "early days" people living in Castle Valley went to the railroad town of Cisco for supplies. They were then floated by raft from Dewey to the mouth of Professor Creek where the small town of Richardson was located. A post office was opened at Richardson in 1886 and discontinued in 1905. Richardson was ten miles below Dewey, twenty miles above Moab.

95. 1888 Kane

In the summer of 1888, Elmer Kane made a raft and drifted down the Colorado River from Grand Junction, Colorado, to Moab (94 miles). He saw miners in a flat-bottom skiff along the river above Moab; they, too, had come down from Grand Junction (U.S. v. Utah, 1931, Report of the Special Master, 73).

96. 1888 Shafer

In November, 1888, Francis M. Shafer and his mother came down the Colorado River from Cisco to Nigger Bill Creek (about 30 miles) on a raft loaded with about 500 pounds of bedding, supplies and placer mining tools. The raft was later taken back to near Castle Creek. From Castle Creek the two men took a 14-15 foot rowboat up river, rowing and towing (U.S. v. Utah, 1931, Report of the Special Master, 73).

97. 1889 Kendrick

In 1889, from March through May, Frank C. Kendrick ran an instrumental railroad survey down the Colorado from Grand Junction to the mouth of the Green River (see 1889-1890, Robert B. Stanton, for a full account).

98. 1896 Croxton

In June, 1896, Judge J. H. Croxton of Denver went down the river (from Moab?) on a prospecting trip. The judge was greatly impressed with the river as a means of transportation (Moab Grand Valley Times, June 26, 1896).

99. 1896 Minich - Keller

By sailing and towing Minich and Keller from Moab, moving at the rate of seven miles a day, reached Hotel Bottom near Cisco on September 3. An article in the Moab Grand Valley Times, September 11, 1896, reported the men were in a "steamer."

100. 1897-1908 Branson Lumbering

In 1897 and 1898 and in 1902 and 1903 and possibly in other years up to 1908, Thomas Branson and his son Jesse shipped lumber from Castle Creek to Moab on lumber rafts. The rafts, averaging 48-64 feet in length and 16-feet in width, carried 10,000 - 15,000 feet of lumber in low water and 20,000 - 25,000 feet in high water. Two men would accompany each raft. The Bransons sent approximately ten rafts per year down the river. The trips took two and a half to three hours at high water and ten hours at low water. This method was profitable, since to transport lumber overland would take six or seven four-horse teams and six or seven men (U.S. v. Utah, 1931, Report of the Special Master, 74-75; Daughters of Utah Pioneers, Grand County, 1972, 95).

101. 1898 Grimm

In August 1898, Henry Grimm went upstream from Moab, a distance of about 22 miles in a row boat 24 feet long and with a five-foot beam. The boat carried a load of 500 pounds. Grimm returned to Moab hauling a raft of 6,000 feet of lumber (U.S. v. Utah, 1931, Report of the Special Master, 73).

102. 1900 - 1901 Robert B. Stanton

Robert B. Stanton, after the failure of his ambitious plan to build a railroad through the canyons of the Colorado (see 1889-1890 Robert B. Stanton), returned to the canyon country as head of the Hoskaninni Company. Stanton expected to dredge for gold in the sands of Glen Canyon and to this end set up a huge floating dredge above Hall's Crossing, 123 miles above Lee's Ferry. The dredge, built by the Bucyrus Company (later Bucyrus-Erie), was 105 feet 4 inches long and 36 feet wide, was assembled at Camp Stone on the river in 1900, and there operations were begun. But sluicing machinery did not save the fine, powdery gold and the enterprise failed in 1901. The dredge was abandoned but was later moved downstream about a mile where it later sank and is now under the waters of Lake Powell.

In connection with the dredging operations, Stanton used a launch, and a scow and possibly some additional smaller boats.

Stanton's record of the Hoskaninni venture has been published by Crampton and Smith, eds. (1961).

103. 1901 Johnson and others

Johnson, Iverson, Warner and Livingston in August, 1901, boated down the Colorado from Dewey to Moab in one day (Moab, Grand Valley Times, August 16, 1901).

104. 1904 - 1907 Chaffin, Turner

Marston (1960, 300) reports a trip by Louis M. Chaffin and Alonzo G. Turner into Cataract Canyon in 1904, and by Turner in 1907. In the 1904 trip the men used two small rowboats drawing six to eight inches (U.S. v. Utah, 1931, Report of the Special Master, 62).

105. 1907 Mendenhall

In August or September, 1907, Walter E. Mendenhall, in a scow 14 or 15 feet long travelled from Cisco to Moab (U.S. v. Utah, 1931, Report of the Special Master, 73-74).

106. 1909 Corps of Engineers

During the 1890's and the first years of the twentieth century citizens living in Green River and Moab, Utah, talked up the possibility of using the rivers between the two places as highways of commerce. After several unsuccessful attempts had been made to carry out this plan with steamers and boats of several kinds, as noted in this report, an appeal by the Utah legislature was made to Congress to improve the streams for navigation.

In compliance with the River and Harbors Act of March, 3, 1909, an examination and survey of the Green River and the Colorado River above the confluence was undertaken for the War Department by the Corps of Engineers. The purpose of the investigation was to determine if the rivers were worthy of improvement through Federal expenditure.

The first inspection of the rivers was made by Charles T. Leeds, First Lieutenant, Corps of Engineers, between April 27 and May 4, 1909. He went from Moab, Utah, to the confluence of the Green and Colorado rivers in a rowboat. There he was met by A. I. Anderson and the two men proceeded up the Green River in M. Oppenheimer's Paddy Ross, a 27-foot sternwheeler drawing 15-18 inches, powered by a 14 h.p. gas engine (see Green River, 1907-1909, Oppenheimer).

Leed's preliminary report of August 3, 1909 recommended that improvements of the rivers were not warranted, but that a second investigation should be made at a low-water stage. Such a study was conducted by D. E. Hughes, Leed's assistant engineer, in November, 1909. The Paddy Ross was again used. Hughes travelled from Green River, Utah, to Moab, Utah, and back sounding the channel depths.

Lt. Leeds wrote a final report on the basis of these surveys, dated March 19, 1910. He concluded that the rivers studied were navigable in low water and "that a skillful pilot navigating the rivers regularly could, at time of ordinary low water, take a flat-bottom boat of ample power, 60 feet long, 12 foot beam, drawing 24 inches, from Moab to the Brown Riffle one-half mile below the bridge at the town of Green River." But Leeds found the rivers under question not navigable waters of the United States but of the State of

Utah, and therefore "not worthy" of improvement by the federal government; and no action was taken.

The reports of Leeds and Hughes, together with relevant correspondence, were published by Congress. See U.S. War Department, Corps of Engineers (1910).

107. 1911 - 1912 U.S. Geological Survey

In October, 1911, a U.S. Geological Survey party under Raymond C. Seitz, started with two skiffs from Grand Junction and worked their way 94 miles down the Colorado River to Castle Creek above Moab. Westwater Canyon was bypassed with wagons. The boats were hauled to Moab and in October to December, 1912, the survey was continued to the mouth of the Green River. A third boat was also used. One boat was left at the junction, and the surveyors dragged the other two back to Indian Creek where they left the river (Marston, 1960, 300).

108. 1912 Grand and Green River Navigation Company

The gasoline launch of the Grand and Green River Navigation Company took its maiden voyage on Sunday, July 25, 1912. A group of young people took the boat which ran from the bridge to the mouth of Mill Creek and back, a distance of three miles (Grand Valley Times, July 26, 1912).

109. 1916 Kolb - Shields

In mid-August, 1916, Ellsworth Kolb and J. W. Shields, after failing to run Black Canyon on the Gunnison, left Delta, Colorado, in a 17-foot freight canoe. Kolb spent several days inspecting the rapids in Westwater Canyon and decided to portage around them, after which they put in the river and reached Moab (Marston, 1960, 303; Moab Grand Valley Times, August 18, 25, 1916).

110. 1916 Kolb - Loper

In October, 1916, Ellsworth Kolb and Bert Loper in a cedar canoe ran the Colorado from Glenwood Springs down to Moab. The pair ran Westwater Canyon successfully. Kolb left at Moab but Loper ran on down to the mouth of the Green River and then returned to Moab with the help of an outboard motor (Marston, 1960, 303; Moab Grand Valley Times, October 20, 1916; Denver Times, September 28, 1916; Denver Post, September 28, 1916).

111. 1920 Emrich and others

In August, 1920, a party of oilmen, including E. M. Emrich, geologist for the Carter Oil Company, and F. W. Strong, H. L. Rath, and Frank Shafer, traversed the Colorado from Moab to the mouth of the Green River (Moab Times-Independent, August 19, 1920). The party took one day to go down and returned at the rate of four miles per hour (U.S. v. Utah, 1931, Report of the Special Master, 76).

112. 1926 U.S. Geological Survey

In August, 1926, Carroll E. Dobbin and J. B. Reeside of the U.S. Geological Survey, went from Moab to the mouth of the Green River in a 16-foot boat powered by an outboard motor. Their purpose was to make a geological reconnaissance of the banks of the Colorado River. The party reached the confluence in two days and returned at a speed of two miles per hour in three to four days (U.S. v. Utah, 1931, Report of the Special Master, 79).

113. 1926 Galloway

In April or May, 1926, John and Parley Galloway ran from Westwater Canyon down to Moab (60 miles) using a 16-foot rowboat (U.S. v. Utah, 1931, Report of the Special Master, 74).

114. 1923 - 1927 Moab Garage Company, and others

From about 1920 to 1927, prospects and discoveries of petroleum along the Colorado between Moab and the mouth of the Green River brought about a flurry of activity and there was a substantial use of this river for commercial purposes during these years. The Moab Garage Company, Moab, a common carrier in Utah, owing to the oil excitement along the Colorado, in August, 1923, put in operation a 20-foot long boat, powered by a four-horsepower Evenrude outboard motor. The craft, called the Punkinseed, drew 20 inches and carried passengers and light freight.

In 1925, the Moab Garage Company entered into a contract with the oil companies to transport machinery and equipment from Moab to the wells. For this purpose a 75-foot long scow was built powered by a 40-horsepower automobile engine and an eight-foot paddlewheel. The boat was 14-15 feet wide, three feet deep and drew four inches when empty. It was provided with a capstan and a 500-foot steel cable for use on sandbars.

Between March, 1925, and June, 1929, the scow made about 240 trips between Moab and the wells which were located within a distance of 38 miles below Moab.

In addition to the scow, the garage company operated smaller boats in the same area and in the same years to carry passengers, tourists and light freight. These were the Punkinseed, noted above, the Black Boat and the Chandler (U.S. v. Utah, 1931, Report of the Special Master, 76-78; Ekker, 1964, where the Moab Garage scow is illustrated).

Besides using the boats operated by the Moab Garage Company, the Midwest Refining Company, Texas Production Company, Utah Petroleum Company (or the Southern Utah Oil Company), during these years along the Colorado River below Moab, operated motor boats of their own (U.S. v. Utah, 1931, Report of the Special Master, 78-79).

The activities of the oil companies during these years were regularly reported in the Moab Times-Independent, 1923-1927. A number of witnesses in the "River Bed Case" (U.S. v. Utah, 1931) testified on matters relating to the navigational use of the Colorado by the oil companies, covering the river between Moab and the mouth of Lockhart Canyon, a reach of 38 miles.

115. 1926 - 1928 U.S. General Land Office

During the years 1926 to 1928, surveyors and engineers of the General Land Office ran a meander of the Colorado River where public land surveys touched the stream in the reach below Moab to the confluence of the Green. Operations were confined to the months of May, and August to December. The party operated two 16-foot boats of its own, powered by outboard motors and drawing 10-11 inches. The surveyors maintained camps at various points and supplies were regularly brought down by the scow operated by the Moab Garage Company, as well as by its other boats (U.S. v. Utah, 1931, Report of the Special Master, 79).

116. 1929 Dent - Corps of Engineers

In August and September, 1929, Elliott J. Dent, Lieutenant-Colonel, Army Corps of Engineers, made an "official" examination of the Colorado River from Moab to a point just below the mouth of the Green, and thence up the Green for five miles and thence back to Moab. A second trip was made in Glen Canyon from North Wash to Lee's Ferry. Travel on the section below Moab was accomplished in

the Moab Garage Company's 27 foot passenger boat, the Chandler.

Lt. Col. Dent was sent by the War Department to assist the Department of Justice in the "River Bed Case" (U.S. v. Utah, 1931). With a background of engineering work on a number of important rivers, the officer made his examination in 1929 to prepare himself for testimony on the physical conditions of the river affecting navigability. He did not go because of any general or specific interest of the War Department but only to qualify himself as a government witness. Most of Dent's testimony in the case (U.S. v. Utah, 1931, Record, 1217-1307, Abstract, 328-370) was taken up with the physical conditions of the river as he observed them and not with opinions on navigability, though he stated that he knew of no other river in the United States of the character of the Colorado, as he observed it, which is commercially navigated.

117. 1933 Leich

In 1933, Harold H. Leich in a kayak ran from Grand Lake to Grand Junction. There he built a punt and continued on down the river going through Westwater Canyon alone on August 16. Continuing on Leich wrecked his boat in Cataract Canyon and was forced to walk and swim on down to Hite. He walked out to Hanksville (Marston, 1960, 304; illustrated in Belknap and Belknap, 1974, 29).

118. 1935 Jones

Leslie A. Jones made the run from Moab to Hite in 36 hours. This was during the days of August 8-9, 1935. Jones used an aluminum canoe rigged with oars (Marston, 1960, 306).

119. 1937 Hunting Trip

A deer hunting trip down the Colorado River as far as the Cataract Canyon, five miles below the mouth of the Green River was made by eleven people in November, 1937. The trip was made in two motor boats. The party stopped at the confluence for four days and were successful in shooting seven bucks. No specifics given (Moab Times-Independent, November 4, 1937).

120. 1937 Jorgensen - Duncan

Boyd C. Jorgensen and Lyman E. Duncan of the South-eastern Utah Tourist Guide Service, in May, 1937, built a fast

motor launch designed to carry ten passengers to points of interest along the river (Moab Times-Independent, May 6, 13, 1937).

121. 1937 - 1938 Cane Creek Oil Company

The Cane Creek Oil Company, planning to drill for oil down the river from Moab, "has several boats engaged to handle the transportation" (no details) (Moab Times-Independent, May 13, 1937). Three barges to take care of transportation have been installed (Ibid. July 1, 1937). Officers of the company made a trip down the Colorado to the site of drilling operations (Ibid. December 9, 1937). They also travelled down the river to Cane Creek (Ibid. January 20, 1938). Casing and tubing were shipped by barge to drilling site (Ibid. June 2, 1938). Operations of the Cane Creek well have been slow owing to the fact that everything must be transported by boat, a slow and expensive operation (Ibid. October 27, 1938).

122. 1938 McDaniel

William G. McDaniel, in charge of the U.S. Geological Survey of the Colorado River, with a guide and riding in a specially designed motor boat, made his way from Hite upstream through Cataract Canyon to the confluence. At that point, the men were forced to leave their boat. No further details (Moab Times-Independent, December 15, 1938).

123. 1938 Thompkins

P. W. Thompkins, a prominent businessman of San Francisco, made a trip down the Colorado to its junction with the Green. He planned to spend three weeks photographing the side canyons. Thompkins was accompanied by Harry Redd, a local photographer. The guide was Norman Nevills (Moab Times-Independent September 29, 1938).

124. 1939 - 1940 Pittman

Emmett Pittman of Moab operates an 18-foot tourist boat on the Colorado and Green rivers. The boat is powered by a V-8 engine and seats eight people (Moab Times-Independent June 8, 1939). This same paper June 29, July 20, 1939, and May 16, 23, 1940, reports that Pittman had made tourist runs from Moab to the confluence and return.

125. 1940 Turner

Ace Turner recently began tourist travel on the river between Moab and Green River. The Turner boat is powered by a large gasoline motor and airplane propeller and has a very light draft. The boat will accomodate 10-12 people. The Moab Times-Independent May 23, 30, 1940, reported that Turner took four tourists on a run from Moab to Green River, and returned with seven.

126. 1945 Herwig

In the late fall of 1945, W. Herwig carried a load of freight from Moab to Hite in a Salmon River-type scow (Marston, 1960, 305).

127. 1945 Nevills

Norman Nevills started out from Moab on June 20, 1945, with a tourist party (Moab Times-Independent June 20, 1945).

128. 1947 Harris - Brennan

From July 25 to August 7, 1947, Don Harris and Jack Brennan took an amateur cinema photographer through Cataract Canyon (Marston, 1960, 305).

129. 1948 - 1952 Marston - Walker

In May, 1948, Otis Marston and Preston Walker ran the full length of the Dolores River from Dolores, Colorado, to its mouth and thence down the Colorado to Moab. The boat used was a San Juan River-type punt. The run was made without difficulty. Only at one place, Snaggletooth Rapid, was lining necessary. Brief account in Marston (1960). Marston's diary of the trip was published in 1949. This appears to have been the first recorded run of the Dolores River. In May, 1949, Walker repeated the trip and in May, 1952, he started through again but lost a boat and the party walked out (Marston, 1960, 305).

130. 1949 Ross

In September, 1949, Kenneth Ross ran from Moab to Hite in an inflated boat (Marston, 1960, 305).

131. 1955 Hudson - Nichols

From Fruita, Colorado, Ed. A. Hudson and Ed Nichols piloted an inboard motor boat to Lee's Ferry. The boat was sunk in Cataract Canyon but was raised and the journey continued (Marston, 1960, 298).

132. 1958 Hatch

Bus Hatch took a party of sixteen down the Colorado from Moab to Cane Creek in Glen Canyon. The party rode on rubber rafts (Denver Post, April 29, 1958).

133. 1959 National White Water Championships

In July, 1959, the National White Water Championships were held in the Superstition Rapids on the Colorado River, seven miles east of Glenwood Springs. Three kayaks were swamped in a white water race (Denver, Rocky Mountain News, July 6, 1959).

Since the 1930's and 1940's tourist travel and recreational boating have accounted for most of the navigational use of the Colorado River in the upper basin. As we have noted above, the Green River came in for a large share of this activity, but by 1975, the Colorado River in Colorado and Utah was becoming one of the most popular white water streams in the West.

134. Colorado. We have been advised by the Bureau of Land Management offices in Craig, Glenwood Springs, and Grand Junction, Colorado, that commercial floatboating on the Colorado River in Colorado is a very active business. The BLM is only just now in the process of developing a permit system and fee regulations and there are no official statistics available on the extent of recreational use of the river. In a letter dated October 14, 1975, Mr. Stewart A. Wheeler, Area Manager, BLM, Glenwood Springs, stated that at least sixteen commercial outfitters were operating on the Colorado within the Kremmling and Glenwood Springs resource areas of the BLM. Some commercial outfits are also running trips on Roaring Fork and Crystal River. Crystal is a branch of Roaring Fork which enters the Colorado at Glenwood Springs.

In a letter dated October 14, 1975, Raymond G. Evans, BLM office at Craig, Colorado, stated that total river use in 1974 has been estimated at 50,000 visitor days. Bureau of Land Management officials agree that heavy use of the Colorado is causing many problems - pollution, destruction of environment, law enforcement, and the like - and the Bureau is developing a river management plan to resolve them.

Recreational boating below Grand Junction and on down the Colorado through Cataract Canyon to Lake Powell is now carefully regulated and we have some reliable statistics to report and more precise information.

Mr. Thomas J. Owen, District Manager, Bureau of Land Management, Colorado, wrote that the only section of the Colorado River where there is good use data is the reach below Grand Junction; more precisely, between Loma, Colorado, and Westwater, Utah. According to Owen, nine commercial outfitters ran this reach in 1974 for a total of 1,557 user, or passenger, days; non-commercial use amounted to 114 user days. In 1975 (to about October) eight commercial outfitters ran this reach for a total of 2,005 user days;

non-commercial use amounted to 481 user days. The figures on non-commercial use do not include power boaters (of which, Owen writes, there is a considerable amount) since these boaters return to their launch point and are not counted with the others at the Westwater ranger station take-out point. Undoubtedly, a good many commercial float trips do not take out at Westwater but continue on through Westwater Canyon (see below).

135. Westwater Canyon. One of the most popular white water runs is the short trip through Westwater Canyon (also known as Hades, and Granite, Canyon) on the Colorado, just below Westwater, Utah. The narrow canyon, full of challenging rapids, is less than 17 miles long. Westwater was seldom run until the early 1970's when more and more river enthusiasts began to appreciate it. Much of the traffic through Westwater is carried by commercial outfitters who put in either at points below Grand Junction, Colorado, or at Westwater, Utah. Some operators on a one-day run debark at the foot of Westwater Canyon but most of them make a two-day trip of it and end their run at Moab.

River running through Westwater Canyon is regulated by the Bureau of Land Management in Moab, Utah. In an interview (1975) Mr. Lee K. Wangsgard, Area Manager, Grand Resource Area, BLM, Moab, advised that 26 outfitters hold permits to run Westwater. In 1974, BLM recorded 6,750 user days through the canyon, but of these 2,937 user days were by private parties. Mr. Wangsgard advised that user days for 1975 will probably exceed those for 1974.

One of the outfitters holding the largest number of permits (750) to run Westwater is Western Adventure Safaris, Box 1732, Grand Junction, Colorado. In an interview (1975) Mr. John Fifield, owner and operator of Western Adventure Safaris, stated that his tours begin in Colorado and end, after the canyon run, in Utah.

136. Moab Area. Moab in Utah has long been a crossroads and it is today an important focal area in recreational boating on the Colorado. It is the ending point for upstream and downstream travel and the beginning point for trippers heading down for the white water of Cataract Canyon. But there is a substantial amount of localized recreational boating as well in the Moab area.

Visitors interested in a short trip on the Colorado have the choice of five different companies offering jet boat service on the river. In an interview (1975) Fred Radcliffe,

owner of Alpha Action Tours, stated that he runs jet trips below Moab for 35 miles using an 18-foot boat with a deep v hull and powered by a 335 horsepower motor capable of reaching 60 miles per hour. Radcliffe runs upstream from Moab a few miles during high water only. He runs the jet boat tours daily from early May into October. Radcliffe claims to have clocked 180,000 miles on the Colorado River, not all of them in jet boats. He advised that most of his passengers come from out-of-state - Chicago, New York, San Francisco.

Certainly the most interesting boat on the upper Colorado River today is the Canyon King owned and operated by Tex McClatchy, owner and operator of Tex's River Expeditions, Moab, Utah. The Canyon King, modelled after the old Mississippi River steamboats, is a 40-ton, all-steel stern-wheeler, 93 feet long, 26 feet wide and has a carrying capacity of 200 passengers. Power is supplied by a diesel engine. McClatchy built the boat himself on the banks of the Colorado half a mile below the Moab bridge and launched it in 1971. Tex advertises the Canyon King as "the only genuine paddlewheel riverboat operating west of the Rockies." McClatchy operates the boat up and downstream from Moab between Arches and Canyonlands national parks. During the runoff period, May-June, longer trips are run; during the rest of the season short trips only are the rule. With a draft of about two feet, the boat can operate in three feet of water but, owing to sandbars, soundings must be taken frequently.

In an interview (1975) McClatchy, who came to the Colorado in 1959, supplied much of the above information. See Barnes (1973) for further specifications and details on the building and launching of the Canyon King. It would appear that McClatchy's big boat is the largest ever floated on the upper Colorado, a record previously held by the Charles H. Spencer, also a paddlewheel steamer based at Lee's Ferry. The Spencer was short by one foot in its measurements: 92 feet long, 25 feet wide! (see Rusho and Crampton, 1975, 95-96).

According to John Williams (Interview, 1975) of Mitch William's Tag-a-long Tours, Tex McClatchy was the first in Moab to get into commercial, recreational boating, this in 1959. Mitch Williams was second and Fred Radcliffe, noted above, was third. In addition to excursions on the Canyon King, McClatchy offers a program of white water float trips through Westwater Canyon, Cataract Canyon, and through Desolation and Gray canyons on the Green River. Tag-a-long Tours offers a wide variety of land and river float trips, including Westwater Canyon, Cataract Canyon, Desolation and Gray canyons, and the San Juan River.

137. Cataract Canyon on the Colorado River immediately below the confluence of the Colorado and Green rivers is one of the roughest reaches on either river and it is a highly popular run among the white water set, most of whom travel with commercial outfitters. Although some of the commercial traffic does start on the Green at Green River, Utah, most of it begins on the Colorado at Moab.

Statistics for 1974, made available by the Bureau of Land Management (Use Statistics, March, 1975), Salt Lake City, reveal that Cataract Canyon was the locale of 16,960 user days (1973 total, 14,150). Of these, 1,967 user days were registered by private users, the rest were commercial. Most of the use through Cataract is by inflated raft, but some trippers use hard boats usually outboard-powered.

The National Park Service, Moab, which regulates boating traffic through Cataract Canyon, lists 18 outfitters licensed to run the canyon. Fifteen of these are based in Utah, the rest in other states.

For recreational boating in Glen Canyon below Glen Canyon Dam, see 1869-1975, Glen Canyon, under Chronological Summary of Navigation on the Colorado River, above.

COLORADO RIVER FERRIES

138. Colorado. In 1881, when the Uncompahgre and White River Utes were removed from Colorado to Utah, they were escorted by military forces down the Uncompahgre River to the Gunnison and thence to the Colorado River to the later site of Grand Junction. At that point "large boats were used to ferry the Indians across the Colorado . . . These boats remained for many years, and western immigrants and early settlers made use of them to cross the big river." (Rockwell, 1956, 174-175). The story of the Ute removal is found in Emmitt (1954). See also U.S. Work Projects Administration, Colorado (1941, 158-159).

Although much has been written about the settlement of western Colorado, which followed very quickly after the removal of the Ute Indians in 1881, we have found in the literature and in oral tradition but few references to ferries operating on the rivers. The reason may be that the river forks at Grand Junction and neither the Colorado nor the Gunnison, presented difficult obstacles to fording at least most of the year. For the same reason there were few obstacles to the building of bridges which replaced the fords at early dates.

According to Mitchell (n.d.) the first ferry at Grand Junction was put in operation by Weil and Fitzpatrick. They were compelled to cease operations during high water and the service was discontinued altogether with the opening of the bridge in 1886. In an interview Chambliss (1975) stated that a ferry at Grand Junction was located at the "Old Clifton Bridge" on Road 32. The Ouray, Colorado, Times May 20, 1882, reported that the ferry across Grand (Colorado) River at Grand Junction "is now in full operation."

In an interview Ruth Tilton (1975), resident of Palisade, Colorado, for fifty years, stated that there were ferries, no dates given, at onetime at Grand Junction on the Colorado and upstream from there at Palisade and Cameo. These ferries operated for brief periods only, as they were soon replaced by bridges. In an interview Forest Tilton of Palisade, Colorado, advised that a ferry, located at the end of east 4th Street, Palisade, operated until 1904, when it was replaced by a bridge. Similar statements were made by H. B. Smith (1975) and Hall (1975).

In 1884, a ferry was operating, across the Grand (Colorado) River at Glenwood Springs, Colorado. This was for passengers only; stock had to swim, according to John L. Noonan (1934).

A photograph (P386. F399) in the Western History Department, Denver Public Library, shows a "Bennett's Ferry" at Glenwood, Colorado. The photo (n.d.) shows a cable operated ferry capable of hauling two teams and a wagon.

Utah. Moab, Utah, on the Colorado, had a ferry service from about 1883. Two years after the first permanent settlers arrived in Moab - in 1881 - a small ferry boat, 28 feet long was put in service. The ferry was so small, however, that wagons had to be taken apart to cross on it. This boat was replaced by a larger ferry built by Norman Taylor and put in service, probably, in 1884. The boat was 60 feet long and 18 feet wide. The fee for crossing was \$4.00 per wagon. Norman Taylor operated the ferry for a time and then it was leased out to other parties and the fares were gradually reduced. In 1897, Grand County purchased the ferry and the fare was reduced to 50 cents per wagon. The boat remained in service until 1912 when it was replaced by a bridge across the river located just below the ferry site (Tanner, 1937, 43-44, 69; Thomson, Interview, 1975).

From ca. 1895 to ca. 1916 a ferry was in operation on the Colorado River at Dewey, Utah. It was put in operation "in the 1890's" by Samuel King and operated by Dick Westwood. In 1909, a one-year contract was awarded to George A. Combs to operate the ferry for \$20 a month plus tolls. Gay Brown was the next ferryman, and helped build the bridge at Dewey which was completed in 1916 (Daughters of Utah Pioneers, Grand County, 1972, 143-144). In 1914, the ferryboat broke loose and floated 15 miles down the river (Moab, Grand Valley Times, February 27, 1914). Apparently the ferry was not replaced before the bridge was completed.

COLORADO RIVER TRIBUTARIES

139. Gunnison River

The Gunnison, a major tributary of the Colorado, and wholly confined to the State of Colorado, is one of the more heavily-regulated streams in the upper basin. Flowing as it does through narrow valleys and canyons, the Gunnison by its nature has attracted reclamation projects but has repelled anything but very localized navigation. The upper valley below the town of Gunnison, is broad though mountainous, but below the mouth of Lake Fork the valley narrows and the river enters Black Canyon of the Gunnison through which it winds a tortuous course for over fifty miles between granite walls that rise precipitously up to 3,000 feet above the water's edge. One of the deepest sections forms Black Canyon of the Gunnison National Monument. The river breaks into the open for some distance above Delta, Colorado, but then drops into another canyon and this continues irregularly to Grand Junction.

Until 1882 the Gunnison River in its canyon reaches was very little known. The early explorers - the Gunnison railroad survey in 1853, the Hayden survey in 1874 - avoided Black Canyon. During the winter of 1882 and 1883 a partial survey of Black Canyon was carried out by the Denver and Rio Grande Railroad but this was not done by boat. The surveyors climbed down the canyon walls, an arduous task which consumed most of the winter. The D & R G soon thereafter laid tracks through the upper part of the canyon between Cimarron and Sapinero.

To determine the possibility of diverting the Gunnison to the Uncompahgre River Valley, William Torrence and four others literally fought their way down Black Canyon for 14 miles below Cimarron but were stopped at the Falls of Sorrow. In the summer of 1901, the U.S. Geological Survey sent A. L. Fellows and William Torrence to make a survey of the river. Using an inflated rubber mattress, and swimming, the surveyors after much hardship did not go completely through the canyon but did reach a point where a diversion tunnel could be built. This feat was highly publicized at the time. Both Beidleman (1959) and Vandebusch (1973) have detailed accounts of the survey and of the Gunnison River Diversion Project.

After the Fellows - Torrence survey of 1901, several parties have made it entirely through Black Canyon as reported by Beidleman (1959): during low water in 1934 some college students using inner tubes; about 1936 a U.S. Geological Survey

team went in at Red Canyon and reached Cimarron traveling on ice the entire distance; in 1940 Parton Meek led a party through the canyon; Vandebusch (1973, 140) reported that he and Dave Nix and John Hrovat, using a five-man rubber boat, weighing 33 pounds, successfully navigated the canyon. The trip began at the diversion tunnel and continued to the mouth of the North Fork of the Gunnison near Lazear. On a prior trip Vandebusch had run that section covered by Fellows and Torrence in 1901.

Vandebusch (1959, 201) states that Ed Nelson, secretary of the Montrose Chamber of Commerce, "holds title to being the river's most active runner," presumably through Black Canyon. The Denver Post September 6, 9, 10, 1949, reported that ex-Marine Ed Nelson, using a five-pound collapsible, and two regulation ping pong paddles for oars, was the first to navigate the 20-mile Narrows of Black Canyon. In a flyer entitled Boating Information Gunnison River, dated 1970, Ed Nelson describes boating conditions between Morrow Point Dam near Cimarron to access road from State Route 92 near the mouth of the North Fork. Nelson writes that the first section from the dam to Red River Portal is "classified expert for all boats, especially kayaks and canoes. Not recommended for aluminum boats." The second area from River Portal to Red Rocks Canyon is "not navigable" because of large rock falls. Travelers should consider this area a hike using small rubber boats to cross and re-cross the river to avoid climbing canyon walls. The third section from Red Rock Canyon to the North Fork of the Gunnison is "excellent boating" but Nelson would classify this section as "expert for all boats because of inaccessibility and several tricky holes." In an interview Ed Nelson (1975), manager of the Montrose Chamber of Commerce, said that he has run the Gunnison River through Black Canyon National Monument at least 250 times.

Beyond recreational boating, which seems to have been confined mainly to the Black Canyon area, and limited to private use, the Gunnison appears not to have been used commercially. Hendrickson (1975), a director of the Delta County Historical Society; Grover (1975), Bureau of Reclamation, Grand Junction; Nelson (1975), manager Chamber of Commerce, Montrose; and Wood (1975), Montrose, retired, and long-time resident, were interviewed. None of these informants had any knowledge of any commercial navigation on the Gunnison River, past or present.

Hendrickson said that, for a short time, no date given, a ferry operated on the Gunnison just above Austin (about seven miles above Delta), and during the runoff period of about three months another ferry operated at Delta before 1885 when the bridge was completed. In 1887, a ferry was established

in Delta, and another between Delta and North Delta. Ark Hall had charge of the Delta ferry which was used by settlers who lived on the North Forks of the Gunnison near Paonia, Hotchkiss and Crawford (Young, 1934).

In a letter, November 14, 1975, Mr. Thomas J. Owen, District Manager, Bureau of Land Management, Grand Junction, reported that his office has no data on the navigation of the Gunnison River.

140. Dolores River

The Dolores River rises in the high San Juan Mountains of southwestern Colorado. After flowing southwesterly about 50 miles the river turns to the west and then to the north northwest for 200 miles to enter the Colorado River in Utah 32 miles above Moab. For the greater part of its course the river flows through deep canyons but in the vicinity of Dolores, at the point where the river turns toward the north, the valley broadens, and for about 40 miles it is half a mile to a mile wide.

Apparently the Dolores has been used not at all for commercial navigation. The following people at Dolores, Colorado, were interviewed and none had any knowledge of any commercial navigation, past or present, interstate or otherwise: Ross Thomas (1975), a resident since 1885; Inez Thomas (1975), a resident since 1887; Merton Taylor (1975) a resident since 1913; and Larry Pleasant (1975) editor and publisher of the Dolores Star. The same results were obtained from interviews with the following people living in Cortez, Colorado: George W. Snyder, resident of southwestern Colorado since 1879; Walter Longenbaugh, resident since 1886; and Minnie B. Rush, resident since 1897.

ca. 1928 Lumber Company

According to Clark (1928, 363), the town of Dolores was a shipping point for the McPhee and McGinnity Lumber Company who from their sawmill on the river nearby shipped lumber to a warehouse in Denver. We are assuming from this that the company floated logs downstream to the mill from the pine forest above in the San Juan Mountains.

1948 Marston - Walker

In May, 1948, Otis Marston and Preston Walker, in a punt, ran the Dolores from Dolores, Colorado, to Moab, Utah, probably the first recorded voyage. See Colorado River 1948 - 1952, Marston - Walker.

ca. 1952 - 1975 Recreational Boating

Since the Marston - Walker trip in 1949 and the subsequent trips by Walker, the Dolores has been used primarily as a recreational river. Float trips, without the use of motor

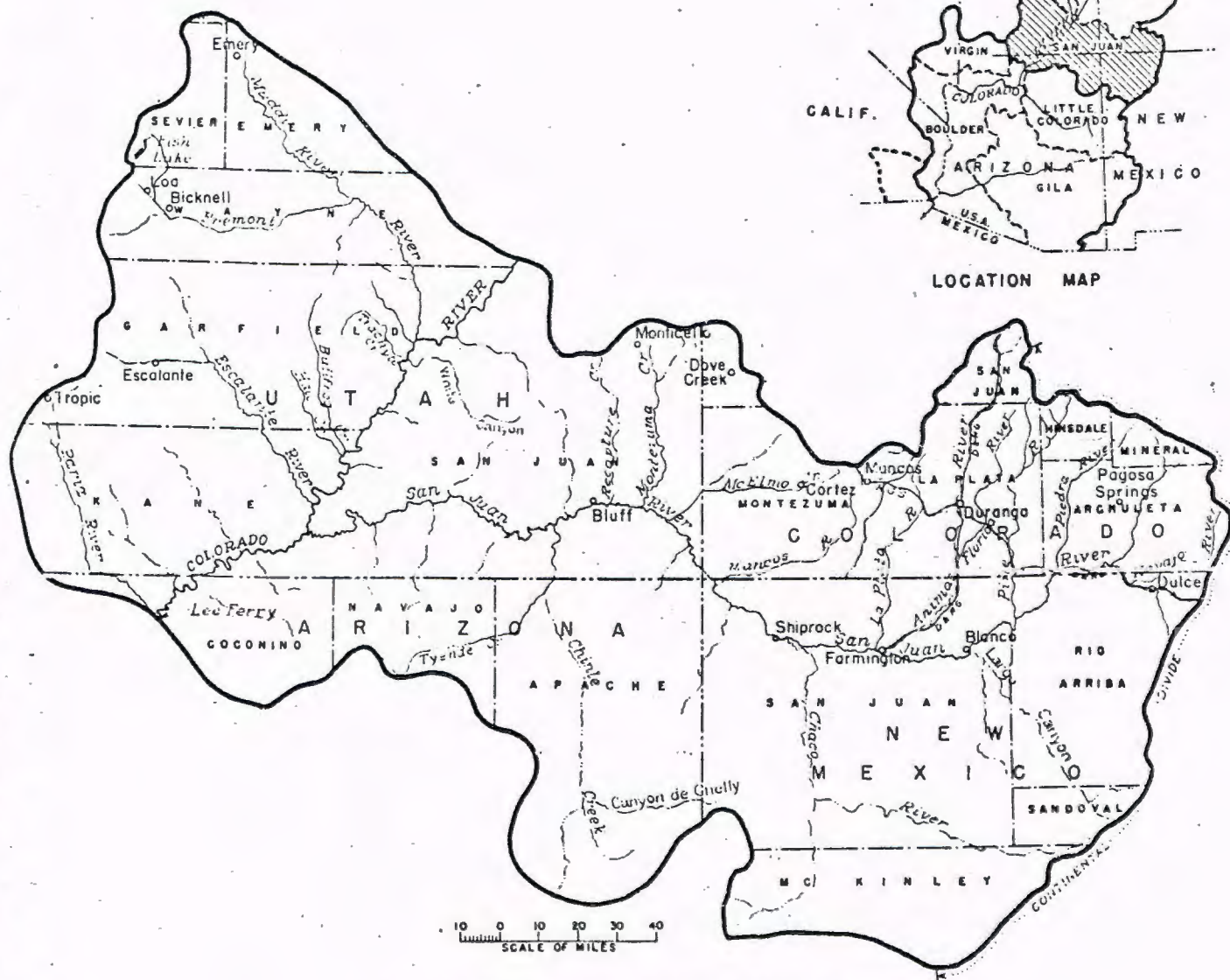
power, is the rule. We have not attempted to gather data on this use except that covering the last year or two. The Denver Post, August 12, 1973, reported a trip by Zeke Scher and seven others. The trip began April 28 near Cahone, no point of termination given.

It does appear that there is a considerable amount of boating on the Dolores conducted by commercial operators. In a letter dated October 21, 1975, Marlyn V. Jones, District Manager, Bureau of Land Management, Montrose, Colorado, stated that his district, which covers the Dolores River, as yet does not require permits to float the stream. However, he does maintain close contact with commercial operators and he lists ten outfitters who are known to run trips on the Dolores.

Jones stated it would be difficult to give accurate visitor use information since his office has no current permit system, but he estimated that floating use of the Dolores has averaged 600 user-days annually. These figures reflect a notable yearly increase in use. Jones did not state what percentage of the boaters ran the entire length of the river from Dolores, where most trips begin, to the mouth of the stream in Utah. Highways cross the river at several points in Colorado and boating parties could exit at any of these with ease.

The lower reach of the Dolores, below the Colorado-Utah boundary, is regulated by the Bureau of Land Management office in Moab, Utah, but no statistics respecting the use of this reach have been published by that office. One informant (Fifield, 1975) runs a two-day "Dolores River Raft Trip" down the lower course of the Dolores and on into Utah.

The Dolores Conservancy District has published a pamphlet (n.d.) which states that white water boating on the Dolores requires about 1,000 cubic feet per second of water. Records for a 14-year period show that flows were high enough for boating on an average of 41 days each year. Even with the projected McPhee Dam, about 12 miles below Dolores, the average for white water boating will still amount to 37 days each year, according to this publication.



San Juan Division of the Colorado River Basin

CHRONOLOGICAL SUMMARY OF NAVIGATION

ON THE SAN JUAN RIVER

The San Juan River, a major tributary of the Colorado River in the upper basin, rises in the San Juan Mountains in southwestern Colorado. It flows southwesterly into New Mexico, then turns to the west and northwest to cross the extreme southwestern corner of Colorado before reaching Utah. Near Bluff, Utah, the San Juan enters a deeply-entrenched canyon through which it flows to Lake Powell. A few minor tributaries head in northern Arizona and thus the basin of the San Juan includes portions of four states.

The Upper Reaches in Colorado and New Mexico. In its upper reaches in Colorado (and this includes the major tributaries - Los Pinos, Animas and La Plata rivers) the San Juan is a typical mountain stream. As the river turns westward in New Mexico its character changes, and it occupies a broad, winding, sandy or gravelly channel in an arid valley, bordered on each side by low, terraced mesas.

Our research in the libraries and in the field has shown that the San Juan River and its major tributaries in the upper reaches were subjected to limited navigational use.

141. San Juan River. The following persons, interviewed in 1975, professed to have no knowledge of any commercial navigation, including logging operations, past or present, interstate or otherwise, on the San Juan River in Colorado and New Mexico: V. G. Lobato, farmed along the San Juan River since 1920; Ralph Chavez, lived along the river since 1914; Mrs. G. L. Butler, member of a prominent pioneer family in San Juan County, New Mexico; Eleanor MacDonald, lived along the San Juan since 1934, prominent local historian (co-author with J. B. Arrington, Sr., below, The San Juan Basin...) and curator of the San Juan County Historical Museum, Farmington, New Mexico; John B. Arrington, Sr., resident of the San Juan River valley since 1888, and co-author with Eleanor MacDonald (above), the San Juan Basin...; James W. Woods, ditch rider for the Jewett Water Users Association for 22 years; Ray Nichols, resident since 1938, Lottie Wethington, resident since 1914; Mary Helen Wethington, resident since 1919; Mrs. Wilfred Wheeler, resident in the San Juan Valley since 1900; Preston Ellsworth, commercial river outfitter.

Of these informants Chavez, Arrington, Woods, Lottie Wethington, Wheeler, and Ellsworth said that they were aware

that the San Juan River here and there had been used at times for recreational boating.

Informants Butler, MacDonald, Arrington and Woods reported a ferry owned by one Bowen operated for a short time on the San Juan at Waterflow, New Mexico, and that another operated near Farmington just above the mouth of the La Plata River. An article in the Salt Lake City Deseret News, October 20, 1880, mentions Bowen's Ferry where the military road for Fort Wingate crosses the San Juan River.

For some account of navigational usage of the San Juan River from Farmington, New Mexico to points in Utah, see the section below entitled "The Utah Reaches."

The Utah Reaches. In Utah the San Juan River for about 55 miles continues to flow through an open valley bordered by low terraces and mesas. But near the mouth of Chinle Creek it enters into a narrow, steep-walled canyon through which it flows for about 62 miles before reaching Lake Powell. In Utah, particularly in the section below Chinle Creek, there has been a considerable amount of navigational usage. There are reasons for this. In its course through the open sections, the river could be crossed easily most of the year by fording, and travel along either bank was not difficult. Furthermore, the San Juan in these sections, owing to its wide, shallow bed, was not really suitable for navigation during the low water months. At high water navigation was possible though lateral land travel was preferred.

In the canyon sections the river, confined to a narrow channel, was more readily navigable all year and, since lateral travel was very difficult, the San Juan provided at least a fair means of access. The discovery of gold placer mines, copper deposits, and oil in the canyon sections stimulated travel and commercial use. Then, too, in more recent times the canyon sections have been traveled extensively by white water boatmen. Crampton (1964a) has written a summary history of the lower San Juan River.

The San Juan River within Utah has been the subject of two court decisions relating to navigability. These, United States v. Utah (1931), and United States v. Utah (1960), have been discussed above in the chapter covering the subject of court decisions and navigability. In both cases the court decided that the San Juan River, as of January 4, 1896, when Utah was admitted to the union, was not a navigable stream. However, much evidence in these cases was taken to show that the San Juan was navigated one way or another by many individuals from the years before Utah became a state down to the dates of the cases. A summary of the more significant parts of that evidence, together with additional information, and

the record of navigational use since 1960, is given below.

Chronological Summary

142. 1882 Goodridge

According to the Report of the Special Master (U.S. v. Utah, 1931, 158) and Marston (1960, 306) the first recorded trip on the lower San Juan River was by E. L. Goodridge, oil prospector, who travelled all the way down the San Juan from Bluff to the Colorado and thence to Lee's Ferry.

143. 1892 - ca. 1928 Gold Mining

In 1892, a gold boom developed along the San Juan River downstream from Mexican Hat. Diggings were found at several points over a distance of 75 miles. The bubble burst in 1893 - 1894. Very few rich mines were found, but prospecting and mining continued intermittently well into the twentieth century. Although the river is easily accessible at several points, a goodly number of the placer miners came down river from points east of Bluff, or Mexican Hat. Many used small boats of rude construction - flat-bottomed, straight-sided, square-ended - varying in length from 14 feet to 22 feet. In these boats the miners carried their tools, equipment and supplies (U.S. v. Utah, 1931, Report of the Special Master, 160). Crampton (1964, 131-134) summarizes the San Juan gold boom. Much of the testimony taken in U.S. v. Utah, 1960, the San Juan "River Bed Case" covers the mining activity along the river's reaches below Bluff and Mexican Hat.

144. ca. 1892 - ca. 1893 Barton

Frank Barton's father was a carpenter and during the gold rush he built several boats. The miners would buy or build boats at Bluff and load them with camp supplies and machinery. According to Barton the river was used a good deal in this manner for transportation because of the bad roads and also because they would get to prospect more sandbars and gravelbars by traveling by river (U.S. v. Utah, 1960, Resume, 117-120).

145. ca. 1892 - ca. 1893 Bayles

Anna Bayles worked for the San Juan Co-op store in Bluff during the time of the great mining boom. She sold supplies to miners who loaded them on boats and went down

the river (U.S. v. Utah, 1960, Resume, 122).

146. ca. 1892 - ca. 1893 Nielsen

Jens Nielsen, resident of San Juan County, Utah, since 1880, testified that miners working along the San Juan River would send boats loaded with supplies down the river from Farmington, New Mexico. The boats went as far as Bluff and on down to Mexican Hat (U.S. v. Utah, 1960, 76). Nielsen gave the date 1890 in his testimony but he probably meant 1892, or 1893, which were the peak years of the first gold boom in the San Juan River Canyon.

147. 1893 Christensen

In 1893, C. L. Christensen took a 16-foot boat, loaded with 2,000 pounds of supplies from Bluff to a trading post at the Rincon (U.S. v. Utah, 1931, Report of the Special Master, 161). The Rincon is a few miles above the mouth of Chinle Creek and about five miles below Bluff.

148. 1893 Lyman

Albert R. Lyman testified that in 1893 there were a number of small boats built at Bluff, Utah. These boats were small - about 13 feet long - flat-bottomed and made of lumber. They were propelled with oars. Some rockers and other machinery were carried on the boats (U.S. v. Utah, 1960, Resume, 3-11).

149. 1893 Raplee

Adebert L. Raplee began placer mining near Mexican Hat in 1893. He employed eight or ten men and placered for over three years. Until a good road was built from Bluff to Mexican Hat, Raplee transported his supplies by going overland to Bluff and returning to his camp by boat. Whenever he needed lumber he would go to Bluff and build a boat, load it with lumber and take it down the river. These boats were usually 18 feet long and 4 1/2 feet wide (U.S. v. Utah, 1931, Report of the Special Master, 161-162).

150. 1894 Johnson

In 1894, Ezekiel Johnson began placer mining at Zahn's Camp. While there he used a boat to go up and downstream for a mile or two. In 1895 and 1896 Johnson placered near the Honaker Trail, he again used a small raft to take supplies up and down the river for a few miles (U.S. v. Utah, 1931, Report of the Special Master, 164).

151. 1894 Mendenhall

In 1894, Walter E. Mendenhall, in a 15-foot boat, went down the San Juan River from Bluff to his mining camp five miles below Mexican Hat. Later, Mendenhall and five other men built three boats. One was 16 feet long, 4 1/2-foot beam and carried about a ton of supplies. The others were 12 feet and 14 feet in length. Using these boats, the party travelled down the San Juan River to its mouth and then up the Colorado River (U.S. v. Utah, 1931, Report of the Special Master, 161).

152. 1894 - 1949 Loper

In July 1894, Bert Loper and five or six other men went down the river from Bluff to Johns Canyon in 16-foot rowboats loaded with supplies. In August 1894, with two other men, he went down from Honaker's Trail to Copper Canyon and back in a 16-foot rowboat (U.S. v. Utah, 1931, Report of the Special Master, 163-164).

Albert "Bert" Loper, after this venture in 1894, went on to boat practically all the rivers in the upper basin of the Colorado. He died in 1949 while boating the Grand Canyon on his eightieth birthday. Loper's more significant runs have been mentioned in this report. His testimony in the "River Bed Case" takes up 139 pages (U.S. v. Utah, 1931, Record, 2306-2337, 2340-2448; see also Abstract, 623-638). A biography, detailing his life on the rivers, has been written by Baker (n.d.) who knew him well. Not all of Loper's trips have been mentioned in this report.

153. ca. 1900 - ca. 1905 Jones

In 1959, Kumen Jones, long-time resident of Bluff, testified that "30 or 35 years ago" he saw a boat come down the river from Farmington, New Mexico. The boat, carrying three people, was loaded with food, and with lumber to make sluice boxes. After stopping at Bluff, the party went on down the river taking the supplies to the placer miners below. About five years later, another boat carrying two or three men came down the river to Bluff. They had come from Colorado and were carrying provisions, lumber and tools. The party was headed for the placer mines downstream (U.S. v. Utah, 1960, Resume, 72-74). In similar testimony given in U.S. v. Utah, 1931 (Abstract of Testimony, 105-106) Jones remembered the date to be near 1900.

154. 1904 - 1909 Karnell

In 1904, Frank H. Karnell worked at a placer mine in Soda Basin near Mexican Hat, using a 16-foot boat with a four or five-foot beam. In the spring of 1905, Karnell built another boat at Bluff and in it carried a thousand pounds of supplies from Bluff to Mexican Hat. He used this boat to move his camp up and downstream. In March, 1906, Karnell and another man built two more boats 18 x 7 feet and 16 x 5 feet. They loaded the three boats with supplies, camp outfits, rockers and wheelbarrows and went downriver to Mendenhall Gooseneck. After working the bars there, they continued on 22 miles downriver to Slickhorn Canyon. In 1909, Karnell took 700-800 pounds of supplies downriver from Bluff to Mexican Hat (U.S. v. Utah, 1931, Report of the Special Master, 164-165). Similar testimony was given by Karnell in U.S. v. Utah, 1960 (Resume, 123).

155. 1910 Hunt

In 1910, John L. Hunt and another man trapped along the San Juan River from Fruitland, New Mexico, to Copper Canyon, downstream in the San Juan Canyon, below Mexican Hat. The hunting trip by boat lasted for two months after October 15. Hunt's companion was a placer miner (U.S. v. Utah, 1960, Resume, 124).

156. 1921 Nevills

In 1921, W. E. "Billie" Nevills made a run from Mexican Hat down to the Honaker Trail (Marston, 1960, 306) a distance of 16 miles.

157. 1921 U.S. Geological Survey

In 1921, the U.S. Geological Survey sent a party to the San Juan to map the river and the canyon below the mouth of Chinle Creek and to study it in connection with proposed power and reservoir projects. The party, leaving Bluff in mid-July and reaching the mouth of the river early in October, used two boats (hailed overland from Green River, Utah) 16 feet long, with a four-foot beam, and drawing one foot. Supplies were brought in overland and carried down to the surveyors at several points along the river (U.S. v. Utah, 1931, Report of the Special Master, 166). The survey resulted in a published paper by Miser (1924).

158. 1933 - 1938 Rainbow Bridge - Monument Valley Expedition

During the years from 1933 to 1938, the Rainbow Bridge - Monument Valley Expedition, directed by the University of California (Berkeley), conducted archeological investigations along the San Juan River below the mouth of Copper Canyon. The parties used ten - and fifteen-foot fold-flat boats (Marston, 1960, 306). A summary report of the first expedition was published by Hall (1934).

159. 1934 - 1949 Nevills

In 1934, Norman D. Nevills, son of W. E. "Billie" Nevills, began running the San Juan River below Mexican Hat, Utah, and two years later he began taking tourist parties down the San Juan and thence down the Colorado to Lee's Ferry. Nevills was something of a pioneer in upper basin commercial river boating. His early trips on the San Juan were popular and he received some good publicity from the pens of his tourists.

From 1936 until 1949, when he was killed in an airplane accident, Norman Nevills remained in the river tourist business. He made at least three runs down the Green River from Wyoming and as many through Cataract and Glen canyons. And there were about five runs through Grand Canyon. Nevills must have boated the full length of the San Juan and Glen Canyon to Lee's Ferry at least 20 times.

Nevills' trips were made in hard-hulled boats of the cataract design (called by some "sadirons"): square stern, sharp prow, 16 feet long, six feet wide. Each boat contained covered decks and water-tight compartments. In going through fast water and rapids, Nevills used the stern-first technique. His boats were powered by oars.

The more significant of Nevills' voyages are listed in this report. Crampton (1964a, 21-24) has published the names of at least twenty Nevills parties through the San Juan River Canyon, 1934-1949, as they were recorded on the rocks at the mouth of Slickhorn Gulch (above Lake Powell). It is interesting to note that Otis "Dock" Marston, whose works we have cited so frequently here, ran the San Juan with Nevills in 1944 (Crampton, 1964a, 22). Staveley (1971), who acquired the Nevills river running business, has something to say about the work of the founder's operations. Bailey (1947), Henderson (1945) and Stegner (1948) are some examples of important articles about Nevills, his tourist runs and boating techniques.

160. 1934 - ca. 1955 Frost

Jack Frost ran the river from Mexican Hat to Copper Canyon in 1934 and through the 1940's and 1950's; he, along with Norman Nevills, transported dozens of tourists and geologists through the canyons of the San Juan River (Baars, 1973, 7; Marston, 1960, 306).

161. 1938 - 1975 Harris

Don Harris, employee of several government agencies from 1933 to about 1967, has operated boats for government agencies from time to time on the rivers of the upper basin since 1938. In 1941, Harris made a trip from Mexican Hat to Lee's Ferry with Norman Nevills. Later in 1941, he made the same trip starting from Bluff. In October, 1958, Harris and another man floated the San Juan from the Four Corners down to the mouth of Chinle Creek using a seven-man rubber boat. In May, 1960, Harris and a party of five ran the full length of the San Juan from Shiprock, New Mexico, using seven-man inflatable rafts and powered with outboard motors (U.S. v. Utah, 1960, Resume, 66-71).

Even before leaving government service about 1967, Harris had developed a substantial tourist boating business. For some years he was associated with Jack Brennan (Harris-Brennan Expeditions) and since Brennan's death, Harris has carried on the business with his son (Harris Boat Trips) at Logan, Utah. Generally, Harris has used hard boats, powered with outboards, in his tourist runs.

162. 1941 - ca. 1954 Aleson

Harry L. Aleson first ran the San Juan in 1941 as a boatman for Norman Nevills. After that Aleson got into the tourist business on the rivers and made many trips downriver, usually from Bluff. Sometimes he made as many as five trips a year. In 1948, one of Aleson's "future boatmen" oared his boat from Shiprock, New Mexico, down the San Juan to its mouth and thence to Lee's Ferry (Aleson, 1960).

Operating under several company names, Aleson enjoyed an extensive business in herding tourists. In a booklet published about 1954, he listed approximately 600 people, by name and state of residence, who had taken his tours which were run mainly on the Colorado and tributaries. He used both power boats and rubber rafts. He died in 1972.

163. 1956 Butchart

In August, 1956, J. Harvey Butchart floated down the river on an air mattress (Marston, 1960, 306).

164. 1957 Smith

In May, 1957, Walter G. Smith went along as a paying passenger with a party of U.S. Geological Survey geophysicists making a survey of the San Juan River. The boat, piloted by Dwayne Bishop, was a 16-foot plywood punt, five-foot beam, square at both ends and decked over for three feet on both ends. Oar powered. The party put in the river just above the Four Corners, in New Mexico, and spent three days on the water before reaching Mexican Hat.

In August, 1957, Smith and his sister from Montezuma Creek went up the San Juan to a point about a mile above the Four Corners and returned on the same day. A professional boatman, Frank Wright, piloted the boat, an aluminum craft with a scow nose, 16-feet long, about five feet wide, and powered by a 35 horsepower Johnson outboard motor (U.S. v. Utah, 1960, Resume, 83, 108-109).

165. 1959 - 1960 Lyon

Joe Lyon, Jr., was a defendant in the San Juan River Bed Case (U.S. v. Utah, 1960). He testified that he had made 18 or 20 boat trips on the San Juan River.

On May 27, 1960, Lyon, Ken Ross and his son Don, went upstream past the Colorado-Utah state line to a point where the telephone line comes across the river. The trip began at St. Christopher's Mission which is two miles above Bluff, Utah. The flat-bottomed boat built by Lyon, was 25 feet long, 8 feet wide and propelled by an outboard motor.

On July 11, 1959 Lyon, and two others put in the river at a point approximately five miles upstream from the Aneth Trading Post which is about 20 miles above Bluff, and went upstream three or four miles. At this point they turned around and came downstream to St. Christopher's Mission (U.S. v. Utah, 1960, Resume, 81-82, 115).

166. 1960 Marston

Otis "Dock" Marston, Colorado River historian, testified in the case of U.S. v. Utah, 1960 (Resume, 93-95), that in

1960 he and three others travelled down the San Juan River from a point just above the Four Corners to a point about five miles above Aneth. The party used a scow-type boat, about 25 feet long, eight feet of beam, flat-bottomed with a slight rocker at the bottom. It was powered by a 25 h.p. Johnson outboard motor.

Later in the same year, Marston made two additional trips on the San Juan river. Using the same boat he put in about two miles above Bluff and went upriver to about five miles above Aneth and returned to Bluff. The following day, Marston went from Bluff to Comb Wash (U.S. v. Utah, 1960, Resume, 94-95, 100-102, 105).

167. 1957 - 1975 Recreational Boating

Recreational boating on the San Juan River dates back to the 1930's when Norman Nevills began his tourist trips, and was carried on by Harris, and Aleson (whose names we have listed above), and others. Indeed, recreational boating seemed to have been the main use of the stream, at least below Bluff and Mexican Hat, since the 1930's. In recent times, since the 1950's, tourist travel on the San Juan has been dominated by Kenneth I. Ross of Bluff, Utah. He had run tourist trips since 1947 but in 1957, he organized his Wild Rivers Expeditions and put the operation on a regular business basis. Ross has not limited his operations to the San Juan but has run the Colorado and Green as well on a commercial basis.

As a witness in the "San Juan River Bed Case" (U.S. v. Utah, 1960), Ross testified that at least once he ran the San Juan from Shiprock, New Mexico, to the mouth of the San Juan and beyond. He has run from Bluff City to the mouth of the river two dozen times; he has been from Bluff to Mexican Hat (the most popular tourist run) "several hundred" times. On several occasions he has made round trips from Bluff to the Four Corners.

On his trips Ross uses inflatable rubber boats: One size is 12 feet with a five-foot beam, the other is 15 feet wide with a beam of over seven feet. He has also used rigid craft (U.S. v. Utah, 1960, 110-115).

In 1975, Wild Rivers Expeditions was offering one and two-day trips from Bluff to Mexican Hat, and a three-day trip from Bluff through the Goosenecks of the San Juan to Clay Hill Crossing.

There are other outfitters who run similar trips, among them San Juan Expeditions, Verle L. Green, based at LaSal, Utah. In an interview (1975) Eugene Foushee, Recapture Motel, Bluff, Utah, stated that Ross is the biggest outfitter and that much of the emphasis today in San Juan River tours is on scientific study. One of those who runs scientific trips through the canyon area is Don L. Baars, Professor of Geology at Fort Lewis College, Durango, Colorado. Baars (1973) has prepared a geological guide for river runners going through the canyon.

Visitor use data on the San Juan River for 1973 and 1974 have been made available by the Bureau of Land Management, Salt Lake City (1975, Use Statistics). For 1973, "above Mexican Hat" there were 2,200 user days recorded; for 1974, 1,665 days. For 1973 commercial outfitters generated 1,200 user days and for 1974, 1,215 user days. The term "above Mexican Hat" probably means from Bluff to Mexican Hat, the most popular tourist run on the river at the present time. For 1973 "below Mexican Hat" there were 577 user days, 477 of them commercial; for 1974, the figures are incomplete. "Below Mexican Hat" undoubtedly refers to "Goosenecks" area, the run ending at Clay Hills Crossing at the head of Lake Powell.

168. San Juan River Ferries - Utah

Testimony given in the "San Juan River Bed Case" (U.S. v. Utah, 1960, Resume, 1, 7, 22, 117) reveals that the trading posts along the San Juan on the north bank at Aneth, Montezuma Creek, Bluff and at the Rincon (near the mouth of Comb Wash, just upstream from the mouth of Chinle Creek) used boats to convey Indians across the river for trading purposes. Frank H. Hyde stated (U.S. v. Utah, 1960, Resume, 78-80) that his father built a cable ferry across the San Juan. The boat was flat-bottomed and but 12 feet long. In the Report of the Special Master (U.S. v. Utah, 1931, 159) reference is made to a ferry 30 feet long operating on the San Juan at the mouth of Comb Wash which was used by the trader there to facilitate the Indian trade.

The testimony in these cases is short on dates for the ferries. Since the white settlement of the area did not begin until 1880, the ferries would have post-dated that event. Some may have continued into the twentieth century. The construction of the bridge at Mexican Hat in 1908 probably ended most of them.

SAN JUAN RIVER TRIBUTARIES

169. Los Pinos River

Research on Los Pinos River, also known as Pine River, a tributary of the San Juan River, has revealed nothing in the way of navigational usage. In an interview (1975) Morrill E. Turner of Durango, Colorado, stated that he lived along Los Pinos River at various locations mostly between Bayfield, and Ignacio, Colorado, from 1909 until 1967 (with a gap of about five years). Between 1923 and 1963 he was the manager and/or owner of the Ignacio State Bank. Mr. Turner managed or owned several farms and ranches with irrigated land along the Los Pinos. Although now a resident of Durango, Mr. Turner was for many years, one of Ignacio's most prominent citizens.

Turner said he had no knowledge of any commercial navigation, past or present, interstate or otherwise, on the Los Pinos River. Neither did he have any knowledge of logging operations where logs were floated down the river, nor any knowledge of ferries on the river. He stated that the river has been used infrequently for recreational navigation. He believed that no stretches of the river were navigable because the stream is entirely too small, being low enough to wade it most of the year; he mentioned, however, that the Los Pinos never was completely dry. All water in the Los Pinos is allocated for irrigation he stated, but the Ute Indians, to date, have not made use of all the water they are entitled to by treaty.

170. Animas River

Although the Animas River is the largest tributary of the San Juan River, our research has revealed that it was used but little in navigation.

The following persons, interviewed in 1975, professed to have no knowledge of any commercial navigation, including logging operations, past or present, interstate or otherwise, on the Animas River in Colorado and New Mexico: Bill Graham, newspaperman and historian and resident of the Animas Valley since 1905; Pearl Gaines, member of a family whose forebears were the first settlers in the upper Animas Valley; Gus Ambold, resident of the valley since 1892 and whose father was one of the first settlers; John Bryce, resident since 1891; Emiel Vandewiele, resident since 1907; Richard W. Turner, bank president and descendant of one of the valley's pioneers;

Zipporah McDaniel, resident since 1900; L. W. McDaniel, resident since 1917; E. L. McDaniel, resident since 1901; Duane A. Smith, Professor of History, Fort Lewis College, Durango, Colorado; Robert W. Delaney, Professor of History and Director of the Center of Southwest Studies, Fort Lewis College, Durango, Colorado; John B. Arrington, Sr., resident in the La Plata Valley since 1888, and historian of San Juan County, New Mexico; M. C. Delzell, resident since 1922; Clarice Kimbrel, resident since 1939; W. E. Hottell, resident since 1939.

All of the informants listed above stated that the Animas, especially the reach just above Durango, was boated on occasion by fishermen and pleasure seekers.

In an interview (1975) Preston Ellsworth of Durango, Colorado, a river pilot by trade, with experience on the Salmon, Snake and Colorado rivers, stated that during the last three years he has operated trips on the Animas on a commercial basis. Ellsworth runs his trips between Memorial Day and Labor Day, providing the river carries enough water throughout that period. He operates half-day and whole-day trips using 16-foot inflatable boats and canoes and white water kayaks. The half-day trips are run on 16 miles of "calm water" above Durango, or for a similar distance downstream from Durango. All-day trips are run downstream between Durango and Bondad, Colorado, a distance of about 20 miles. Twenty to twenty-five people may go on one of the daily trips. Ellsworth said the Animas in the sections he runs is not basically hazardous as long as proper equipment is used and operated by experts. Ellsworth stated that the Animas is excellent for white water kayaking and he believed that some forty people enjoyed this sport every week. On exploratory trips Ellsworth has floated the Animas from Durango to Aztec, New Mexico.

In an interview Ellsworth (1975) stated that he believed that at one time logs may have been floated down the Animas somewhere between Hermosa (about 10 miles above Durango) and Durango, but he could give no specifics. In an interview Logan (1975) stated that the Ireland sawmill, located just upriver from the Main Avenue bridge in Durango floated logs down to the mill, about 10 miles from Hermosa Creek. He believed the logs were used mainly for railroad ties but he could give no specific information.

171. La Plata River

Research on the La Plata River, a tributary of the San Juan River, has revealed nothing in the way of navigational usage. In an interview (1975) Mr. Ray Michael of Hesperus, Colorado, stated that he has lived in La Plata River Valley since 1898, and has been involved with irrigation rights and problems on the La Plata.

Michael said he had no knowledge of any commercial navigation, past or present, interstate or otherwise, on the La Plata River. Neither did he have knowledge of any logging operations, ferries, or recreational navigation; he stated, in fact, that "fish can't hardly navigate the river." Mr. Michael stated that more water was allocated for irrigation than was available in the river, that the first diversion ditch (built by the Thompson Park Ditch Company), about three miles north of Hesperus, often diverts all the water from the river, and that, consequently, the La Plata is dry at times during most years. In his opinion the idea of navigation on the La Plata is preposterous.

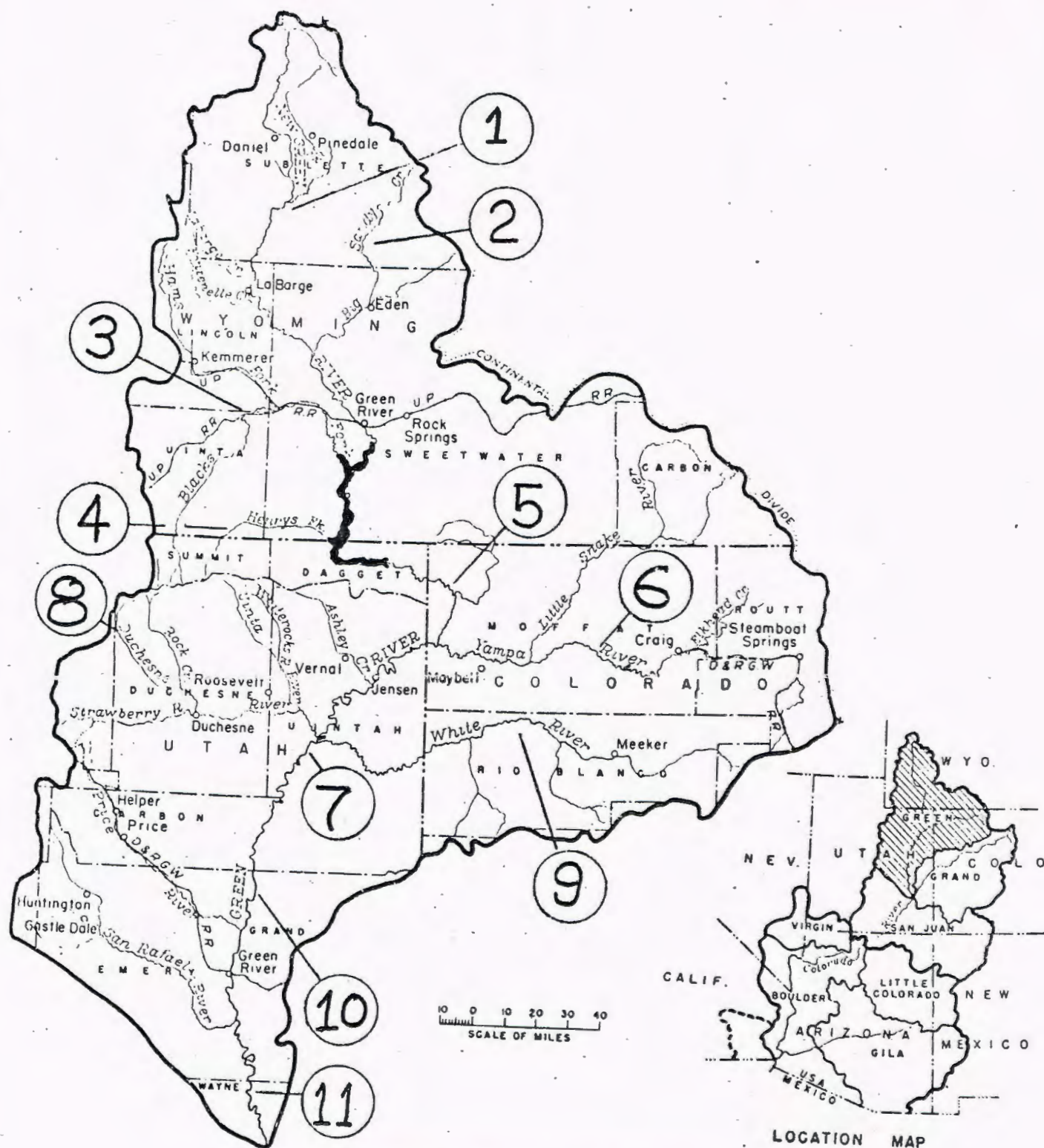
In an interview (1975) Mrs. Carl Aspaas, a resident of the La Plata Valley since 1915, and a member of one of the oldest pioneer families of the San Juan basin, could recall no navigational use of La Plata River.

REACHES OF THE COLORADO RIVER

IN THE UPPER BASIN

In the pages below the Green, Colorado and San Juan rivers have been divided into reaches and these have been determined by political, geographical and legal considerations. Each of the reaches is numbered and located on a map of the river basin. Under each will appear pertinent judicial decisions, reports and statements about navigability, if any. The numbers appearing under the reaches refer back to usages listed in the preceding chronologies.

General statements. Mahoney (1964) has published a feasibility study for the management of the Green and Colorado rivers for navigation and industrial uses which could be made to serve the public in addition to their uses for irrigation and power projects. On pages 12-15, Mahoney presents a profile of the Green River and the Colorado River in Utah showing the reaches involved in court cases.



Green division of the Colorado River Basin

Map showing the reaches of the Green River

REACHES OF THE GREEN RIVER

1. Green River in Wyoming
The Lower section is now covered by Flaming Gorge Reservoir.
1, 3, 4, 5, 6, 13, 17, 33, 34, 35, 37, 40, 41, 48, 51,
52, 53, 54, 55, 59, 60, 62, 64, 66, 67, 70, 72, 73, 81,
82, 83, 87.
2. Big Sandy Creek, or Sandy Creek
82.
3. Black's Fork
88.
4. Henry's Fork
The lower section is in Utah now covered by Flaming Gorge Reservoir.
89.
5. Green River in Utah, Colorado and Utah, to the foot of Split Mountain Canyon.

The uppermost section of the Green River in Utah is covered by Flaming Gorge Reservoir. It has been judicially determined, *U.S. v. Utah*, 1965, that the Green River in Utah, from the point where it enters the state (now covered by Flaming Gorge Reservoir) to the point where it emerges from Split Mountain Canyon, is non-navigable. Split Mountain Canyon is 13 river miles above Jensen, Utah. The navigability of the Green River flowing through Colorado, included in this reach, was not at issue in the case.

After study of court cases and an investigation on the river, Kenneth B. Platt, land economist for the Bureau of Land Management Salt Lake, reported (1955) that "this section of the Green River cannot be considered navigable within the meaning and intent of the previous rulings of the Supreme Court on navigability of streams within the United States." Platt concluded this section is not navigable "in the sense determinative of title to the streambed." See Green River chronology "1955 Platt" for details of the economist's examination of the river.

1, 3, 5, 6, 11, 13, 17, 20, 27, 34, 37, 40, 41, 48, 51,
52, 53, 54, 55, 59, 60, 61, 62, 64, 65, 66, 67, 69, 70,
72, 73, 79, 80, 81, 84, 87.

6. Yampa River
59, 69, 76, 77, 79, 84, 90.

7. Green River in Utah, foot of Split Mountain Canyon to the mouth of Sand Wash.

This reach of the Green River, covering a hundred miles where it flows through the Uinta Basin to the head of Desolation Canyon, has been judicially determined (U.S. v. Utah, 1965) to be a navigable stream. In his study Platt (1955, 78-90) found this reach to be "non-navigable in the sense determinative of title to the streambed."

1, 3, 6, 13, 17, 20, 27, 29, 40, 41, 43, 46, 48, 51,
52, 53, 54, 55, 59, 60, 62, 64, 66, 67, 69, 70, 72,
78, 80, 81, 84, 85, 87.

8. Duchesne River
91.

9. White River
Platt (1955, 101) concluded after study that the "White River throughout its course in Utah is non-navigable in the sense determinative of title to the streambed."
13, 92.

10. Green River, in Utah, from the mouth of Sand Wash to a point 12 miles above the railroad bridge at Green River.

This reach encompasses Desolation and Gray canyons. The court decided (U.S. v. Utah, 1965) that this reach of the Green is not navigable. Platt (1955, 90-92) concluded that this reach is not navigable.

2, 6, 13, 17, 29, 40, 41, 46, 48, 51, 52, 53, 55, 59,
62, 64, 66, 67, 70, 75, 78, 80, 81, 85, 87.

11. Green River, Utah, from a point 12 miles above the railroad bridge at Green River to the confluence with the Colorado River.

This reach, consisting of 132 miles, by judicial determination (U.S. v. Utah, 1965; U.S. v. Utah, 1931) was declared to be a navigable stream. Platt (1955, 96-101) concluded that the upper 35 miles of this reach were "non-navigable in the sense determinative of title to the streambed." His study continued no farther downstream.

2, 6, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 21, 22, 23,
24, 25, 26, 28, 29, 30, 31, 32, 36, 38, 39, 40, 41, 42,
44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 55, 56, 57, 58,
59, 62, 63, 64, 66, 67, 68, 70, 71, 74, 78, 80, 81, 85,
86, 87, 106, 116, 124, 125, 137.



Grand division of the Colorado River basin

Map showing the reaches of the Colorado River
above the mouth of the Green River

REACHES OF THE COLORADO RIVER

12. Colorado River in Colorado to the Utah State Line.
95, 97, 107, 109, 110, 117, 131, 133, 134, 135, 138.

13. Gunnison River.
109, 139.

14. Dolores River, Colorado and Utah.

Early in 1965, the Department of Justice contemplated an action against the State of Utah to determine ownership of the bed of the Colorado River from Castle Creek to the Utah-Colorado line, and of the bed of the Dolores River from its mouth to the Utah-Colorado line. The case was never opened but an engineering report on the matter was prepared by Arthur W. Brown (1964), Bureau of Land Management, Salt Lake City. Brown concluded that the Dolores from its confluence with the Colorado upstream to the Utah-Colorado line "was non-navigable on January 4, 1896, the date on which Utah was admitted to the Union."

129, 140.

15. Colorado River in Utah to Castle Creek.

Early in 1965, the Department of Justice contemplated an action against the State of Utah to determine ownership of the bed of the Colorado River from Castle Creek to the Utah-Colorado line, and of the bed of the Dolores River from its mouth to the Utah-Colorado line. The case was never opened but an engineering report on the matter was prepared by Arthur W. Brown (1964), Bureau of Land Management, Salt Lake City. Brown concluded that the Colorado River downstream from the Utah-Colorado line "was non-navigable on January 4, 1896."

70, 94, 95, 96, 97, 99, 101, 103, 105, 107, 109, 110, 113, 117, 129, 131, 134, 135, 138, 140.

16. Colorado River, Utah, Castle Creek (14 miles above Moab) to a point 4.5 miles below the mouth of the Green River.

This reach was judicially determined (U.S. v. Utah, 1931)

to be a navigable stream.

2, 6, 8, 10, 12, 13, 15, 16, 17, 18, 22, 23, 24, 26, 28,
30, 31, 32, 36, 38, 39, 40, 41, 44, 45, 47, 48, 49, 50,
52, 53, 55, 56, 57, 58, 59, 62, 63, 64, 66, 67, 68, 70,
71, 74, 80, 86, 95, 96, 97, 98, 99, 100, 101, 103, 104,
105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115,
116, 117, 118, 119, 120, 121, 123, 124, 125, 126, 127,
128, 129, 130, 131, 132, 135, 136, 137, 138.

17. Colorado River in Cataract Canyon, Utah.

This reach by judicial decision was found to be non-navigable. The lower part of the canyon has been inundated by Lake Powell leaving but 12 miles in non-navigable status.

2, 6, 7, 8, 9, 10, 13, 14, 16, 17, 30, 40, 41, 45, 49,
52, 55, 56, 57, 58, 59, 62, 63, 64, 66, 67, 70, 71, 74,
80, 93, 104, 117, 118, 122, 126, 128, 130, 131, 132, 136,
137.

18. Colorado River in Narrow and Glen Canyons.

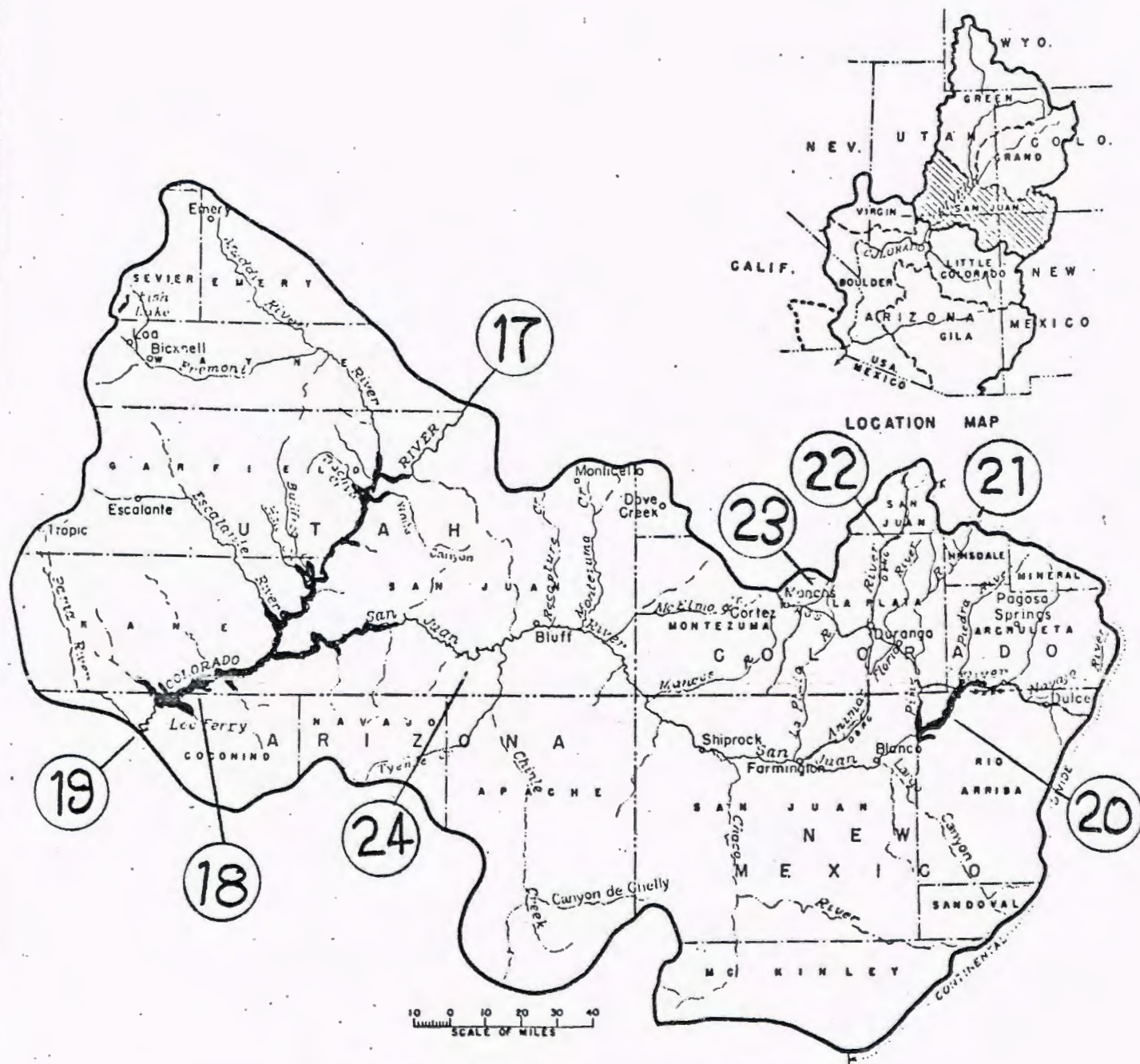
Both sections by judicial decision (U.S. v. Utah, 1931) were declared navigable. Both sections are covered by Lake Powell.

6, 8, 10, 13, 14, 16, 17, 30, 40, 41, 45, 49, 55, 56,
57, 58, 59, 62, 63, 64, 66, 67, 70, 71, 74, 93, 102,
116, 118, 122, 126, 130, 131, 132.

19. Colorado River in Glen Canyon below Utah - Arizona line to Lee's Ferry.

Part of this section is covered by Lake Powell, but the river is free-flowing for 15+ miles.

6, 8, 10, 13, 16, 17, 30, 40, 41, 49, 55, 56, 57, 58,
59, 62, 63, 64, 66, 67, 70, 74, 80, 93, 116, 131.



San Juan Division of the Colorado River Basin

Map showing the reaches of the Colorado River below the mouth of the Green River, and the reaches of the San Juan River.

REACHES OF THE SAN JUAN RIVER

20. San Juan River in Colorado, and New Mexico to the Colorado-Utah line.

The Navajo Reservoir, extending from New Mexico into Colorado, covers a section of the San Juan River.

141, 146, 153, 155, 161, 162, 164, 165, 166, 167.

21. Los Pinos, or Pine River, Colorado and New Mexico.
169.

22. Animas River, Colorado and New Mexico.
170.

23. La Plata River, Colorado and New Mexico.
171.

24. San Juan River in Utah.

As a result of two court decisions, U.S. v. Utah, 1931, and U.S. v. Utah, 1960, the San Juan River throughout its course in Utah was determined to be non-navigable on January 4, 1896, when Utah was admitted to the Union. The 1931 case dealt with the San Juan below Chinle Creek, a distance of about 133 miles, but the lower section of the river is now inundated by Lake Powell leaving about 63 miles of this section that may now be regarded as non-navigable.

141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151,
152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162,
163, 164, 165, 166, 167, 168.

ACKNOWLEDGMENTS

The following institutions assisted the project in important ways:

Government Agencies. U.S. Department of Agriculture, Forest Service offices and ranger stations: Green River, Jackson, Pinedale, Evanston, Mountain View, Wyoming; Vernal, Utah. U.S. Bureau of Land Management offices: Salt Lake City, Price, Moab, Utah; Cheyenne, Pinedale, Rock Springs, Wyoming; Denver, Meeker, Grand Junction, Craig, Glenwood Springs, Montrose, Colorado. U.S. Bureau of Reclamation, Salt Lake City, Utah; U.S. National Park Service, Dinosaur National Monument, Dinosaur, Colorado; U.S. National Archives and Record Service, Federal Records Center, Denver, Colorado; United States Attorney, Salt Lake City, Utah; U.S. Geological Survey, Federal Center, Denver, Colorado. Upper Colorado River Commission, Salt Lake City, Utah; Attorneys-General for the states of Utah, Wyoming and Colorado. Utah State Archives, Salt Lake City; Wyoming State Archives and Historical Department, Cheyenne; Colorado State Archives, Denver. State Recreation Department, Cheyenne, Wyoming; Utah Division of State Land, Salt Lake City.

Museums and Historical Societies. Utah State Historical Society, Salt Lake City; Utah Fieldhouse of Natural History Museum, Vernal; Fort Bridger Museum (Fort Bridger), Sweetwater County Historical Society (Green River), Sublette County Historical Society (Pinedale), Lincoln County Historical Society (La Barge), Wyoming; Moffat County Museum (Craig), Tread of Pioneers Museum (Steamboat Springs), White River Museum (Meeker), Colorado State Historical Society (Denver), Colorado.

Universities and Colleges. American West Center, and the Marriott Library, University of Utah, Salt Lake City; William Robertson Coe Library and School of American Studies, University of Wyoming, Laramie; Bancroft Library, University of California, Berkeley; Southwest Center, Fort Lewis College, Durango, Colorado.

Public Libraries. Salt Lake, Green River, Uintah County (Vernal), and Moab, Utah; Bud Werner Memorial (Steamboat Springs), Rio Blanco County (Meeker), Denver Public, Colorado; California State Library, Sacramento.

Chambers of Commerce. Moab, Utah; Pinedale, Wyoming; Steamboat Springs, Colorado.

And the following. Hatch River Expeditions, Inc.,
Vernal, Utah; Adventure Bound, Inc., Craig, Colorado.

In addition the following individuals supplied important
information, and otherwise assisted the project:

In Utah. Pearl Baker, Green River; Howard W. Balsley,
Samuel J. Taylor, Moab; Karen Lemoine, Susan Neel, Shelley
Merrill, Salt Lake City.

In Colorado. Robert McDaniel, Durango.

INTERVIEWS

The following persons were interviewed in 1975 and supplied important information incorporated in the text of this report.

Ambold, Gus

Rt. 1 Box 390, Durango, Colorado, 81301.

June 27, with Robert McDaniel.

Antilla, Alice

417 Pine Ave., Kemmerer, Wyoming, 83101.

August 12, with Steven K. Madsen.

Appel, Walter K.

3514 Concord, Cheyenne, Wyoming, 82001.

August 14, with Steven K. Madsen.

Arrington, John B. Sr.

2122 West Apache, Farmington, New Mexico, 87401.

July 10, with Robert McDaniel.

Aspaas, Mrs. Carl

Hesperus, Colorado, 81326. July 8, with Robert McDaniel.

Baker, Bill

General Delivery, Daniel, Wyoming. August 10,

with Steven K. Madsen.

Baker, Pearl

Green River, Utah. September 4, with C. Gregory Crampton.

Beach, Mary A.

P.O. Box 105, Mountain View, Wyoming 82939.

August 6, with Steven K. Madsen.

Beeler, Sylvia

615 Russell Street, Craig, Colorado, 81625.

August 18, with Steven K. Madsen.

Bryce, John

1757 West 2nd Ave., Durango, Colorado, 81301.

June 26, with Robert McDaniel.

Buck, Karen

P.O. Box 147, La Barge, Wyoming, 83123. August 12,
with Steven K. Madsen.

Butler, Mrs. G. L.

609 North Butler Ave., Farmington, New Mexico, 87410.
July 23, with Robert McDaniel.

Carr, Mr. and Mrs. Bill

P.O. Box 593, Big Piney, Wyoming, 83113.
August 9, with Steven K. Madsen.

Chadey, Henry F.,

Sweetwater County Historical Museum, County
Courthouse, P.O. Box 25, Green River, Wyoming,
82935. August 8, with Steven K. Madsen.

Chambliss, D. Blake

930 Main St., Grand Junction, Colorado, 81501.
August 21, with Robert McDaniel.

Chavez, Ralph

Star Rt. A Box 120, Blanco, New Mexico, 87412.
July 23, with Robert McDaniel.

Counts, Keith

340 School Street, Craig, Colorado, 81625.
August 18, with Steven K. Madsen.

Dahlquist, Oscar

P.O. Box 432, Mountain View, Wyoming, 82939.
August 6, with Steven K. Madsen.

Delaney, Dr. Robert W.

1549 W. 3rd Ave., Durango, Colorado, 81301.
June 25, with Robert McDaniel.

Delzell, M. C.

317 San Juan, Aztec, New Mexico, 87410.
July 15, with Robert McDaniel.

Ellsworth, Preston

P.O. Box 1386, Durango, Colorado, 81301.
July 8, with Robert McDaniel.

Evans, Jim

P.O. Box 727, Pinedale, Wyoming, 82941.
August 11, with Steven K. Madsen.

Fifield, John

P.O. Box 1732, Grand Junction, Colorado, 81501.
August 21, with Robert McDaniel.

Foushee, Eugene

Recapture Motel, Bluff, Utah, 84512. September 6,
with C. Gregory Crampton.

Gabryszak, Dan

Mountain Craft, 810 Lincoln Avenue, Steamboat
Springs, Colorado, 80477. August 16, with Steven
K. Madsen.

Gaines, Pearl

135 West 32nd St., Durango, Colorado, 81301.
June 26, with Robert McDaniel.

Graham, Bill

Rt. 1 Box 483, Durango, Colorado, 81301.
June 25, with Robert McDaniel.

Gregory, Mrs. Jim

P.O. Box 6, Lonetree, Wyoming, 82936. August 7,
with Steven K. Madsen.

Grover, Kenneth

Bureau of Reclamation, Grand Junction, Colorado,
81501. August 8, with Robert McDaniel.

Hall, Leslie O.

340 West 1st, Palisade, Colorado, 81526.
August 22, with Robert McDaniel.

Hangich, Martin

217 Opal Street, Kemmerer, Wyoming, 83101.
August 9, with Steven K. Madsen.

Hatch, Don

411 East Second North, Vernal, Utah. August 19,
with Steven K. Madsen.

Hendrickson, Morgan

261 Park St., Delta, Colorado, 81416. August 22,
with Robert McDaniel.

Herring, Dorothy

P.O. Box 357, Meeker, Colorado, 81641. August 18,
with Steven K. Madsen.

Hottell, W. E.

Rt. 1 Box 53, Aztec, New Mexico, 87410. July 15,
with Robert McDaniel.

Houseley, Cyril

General Delivery, La Barge, Wyoming, 83123.
August 9, with Steven K. Madsen.

Jackman, Burlin and Vella C. Jackman
P.O. Box 123, Mountain View, Wyoming, 82939.
August 6, with Steven K. Madsen.

Kaydas, Joe and Ann Kaydas
321 Cedar Ave., Kemmerer, Wyoming, 83101.
August 9, with Steven K. Madsen.

Kimbrel, Clarice
Mesa Verde Realty, 101 North Main, Aztec, New
Mexico. July 15, with Robert McDaniel.

Lain, E. F.
P.O. Box 477, Big Piney, Wyoming, 83113.
August 9, with Steven K. Madsen.

Lambert, James
Bureau of Land Management, Federal Center,
Cheyenne, Wyoming, 82001. September 29, with
C. Gregory Crampton.

Larsen, Helga
Manila, Utah, 84046. August 7, with Steven K.
Madsen.

Lobato, V. G.
Star Rt. A Box 90, Blanco, New Mexico, 87412.
July 23, with Robert McDaniel.

Logan, Kenneth
Rt. 1 Box 340, Durango, Colorado, 81301.
June 27, with Robert McDaniel.

Longenbaugh, Walter
245 North Ash, Cortez, Colorado, 81321.
August 12, with Robert McDaniel.

Lyttle, Richard G.
P.O. Box 128, 715 Park Street, Meeker, Colorado,
81641. August 18, with Steven K. Madsen.

McClatchy, Tex and Millie McClatchy
Box 67, Moab, Utah, 84532. August 15, with C.
Gregory Crampton.

McDaniel, Edward L.
320 4th Ave., Durango, Colorado, 81301. June 23,
with Robert McDaniel.

McDaniel, Lawrence W.

1928 Highland Avenue, Durango, Colorado, 81301.

June 26, with Robert McDaniel.

McDaniel, Zipporah

320 4th Ave., Durango, Colorado, 81301.

June 23, with Robert McDaniel.

MacDonald, Eleanor

2112 Apache, Farmington, New Mexico, 87410.

July 10, with Robert McDaniel.

May, Kenneth

Outlaw Trails, Inc., Green River, Utah, 84525.

September 10, with C. Gregory Crampton.

Michael, Ray

Hesperus, Colorado, 81326. July 8, with Robert

McDaniel.

Monson, H. Clay

P.O. Box 207, Steamboat Springs, Colorado, 80477.

August 16, with Steven K. Madsen.

Nay, Anna W.

P.O. Box 735, Steamboat Springs, Colorado, 80477.

August 16, with Steven K. Madsen.

Nelson, Ed

P.O. Box 1061, Montrose, Colorado, 81401.

August 8, with Robert McDaniel.

Nichols, Ray

Waterflow, New Mexico, 87421. July 29, with Robert

McDaniel.

O'Connor, Pat

Mountain View Ranger District, Wasatch National

Forest, Mountain View, Wyoming, 82939. August 6,

with Steven K. Madsen.

Peterson, Gust

King Cole Liquor Store, Kemmerer, Wyoming, 83101.

August 9, with Steven K. Madsen.

Pleasant, Larry

Box 644, Dolores, Colorado, 81323. August 6,

with Robert McDaniel.

Radcliffe, Fred

Box 501, Moab, Utah, 84532. August 14, with C.

Gregory Crampton.

Rasmussen, Joe

P.O. Box 422, Mountain View, Wyoming, 82939.

August 6, with Steven K. Madsen.

Reed, Bruce W.

P.O. Box 768, Pinedale, Wyoming, 82941.

August 11, with Steven K. Madsen.

Reynolds, Adrian

P.O. Box 1166, Green River, Wyoming, 82935.

August 12, with Steven K. Madsen.

Rhodes, Edith

Rt. 2 Box B 72, Durango, Colorado, 81301.

June 29, with Robert McDaniel.

Rowley, Eugene F.

142 East 5th, Palisade, Colorado, 81526.

August 21, with Robert McDaniel.

Ruble, Gene

P.O. Box 267, Manila, Utah, 84046. August 8,
with Steven K. Madsen.

Rush, Minnie B.

208 South 7th, Dolores, Colorado, 81323.

August 6, with Robert McDaniel.

Scott, David O., Jr.

Bureau of Land Management, P.O. Box 1869,
Rock Springs, Wyoming, 82901. August 12,
with Steven K. Madsen.

Sellars, Jim

979 22 Road, Grand Junction, Colorado, 81501.

August 20, with Robert McDaniel.

Sisson, Max

3632 G 4/10 Road, Palisade, Colorado, 81526.

August 21, with Robert McDaniel.

Smith, Dr. Duane A.

2911 Cedar Ave., Durango, Colorado, 81301.

June 27, with Robert McDaniel.

Smith, H. B.

115 Victoria Dr., Palisade, Colorado, 81526.

August 22, with Robert McDaniel.

Snodgrass, Kaye

P.O. Box 850, Wyoming Game and Fish Commission,
Pinedale, Wyoming, 82941. August 11, with Steven
K. Madsen.

155
Snyder, George W.

701 Memorial Dr., Cortez, Colorado, 81321.
August 12, with Robert McDaniel.

Stewart, George E.

P.O. Box 124, 393 North 5th East, Roosevelt, Utah,
84066. August 19, with Steven K. Madsen.

Sundgren, Rena

P.O. Box 338, La Barge, Wyoming 83123.
August 9, with Steven K. Madsen.

Taylor, Merton

Dolores, Colorado, 81323. August 6, with Robert
McDaniel.

Teton, Ruth

132 East 4th, Palisade, Colorado, 81526.
August 21, with Robert McDaniel.

Thomas, Inez

P.O. Box 215, Dolores, Colorado. August
12, with Robert McDaniel.

Thomas, Ross

P.O. Box 215, Dolores, Colorado. August
12, with Robert McDaniel.

Thomson, Cecil S.,

Moab, Utah. September 8, with C. Gregory
Crampton.

Tilton, Forest

132 E. 4th, Palisade, Colorado, 81526.
August 21, with Robert McDaniel.

Tilton, Ruth

132 E. 4th, Palisade, Colorado, 81526.
August 21, with Robert McDaniel.

Tinker, Glen

General Delivery, McKinnon, Wyoming, 82938.
August 7, with Steven K. Madsen.

Turner, Kenneth A.

P.O. Box 155, Manila, Utah, 84046. August 7,
with Steven K. Madsen.

Turner, Morrill E.

179 Riverview Dr., Durango, Colorado, 81301.
August 5, with Robert McDaniel.

154
Turner, Richard W.

P.O. Box 1670, Durango, Colorado, 81301.

June 26, with Robert McDaniel.

Vandewiele, Emiel

Rt. 1 Box 463, Durango, Colorado, 81301.

June 25, with Robert McDaniel.

Wall, Mr. and Mrs. Dean

P.O. Box 156, Mountain View, Wyoming, 82939.

August 6, with Steven K. Madsen.

Wangsgard, Lee K.,

Area Manager, Bureau of Land Management, Moab,

Utah, 84532. August 15, with C. Gregory Crampton.

Washburn, Kathy

P.O. Box 117, Mountain View, Wyoming, 82939.

August 6, with Steven K. Madsen.

West, Holmer W.

P.O. Box 83, Granger, Wyoming, 82934.

August 9, with Steven K. Madsen.

Wethington, Lottie

Waterflow, New Mexico, 87421. July 29, with
Robert McDaniel.

Wethington, Mary Helen

Waterflow, New Mexico, 87412. July 29, with
Robert McDaniel.

Wheeler, Mrs. Wilfred

Waterflow, New Mexico, 87421. July 29, with
Robert McDaniel.

Wilfong, Jerry A.

Bureau of Land Management, P.O. Box 1869,

Rock Springs, Wyoming, 82901. August 12, with
Steven K. Madsen.

Williams, John

Tag-A-Long Tours, Moab, Utah, 84532. August 15,
with C. Gregory Crampton.

Wilson, Gordon

Route No. 1 - Box 75, Cheyenne, Wyoming, 82001.

August 15, with Steven K. Madsen.

155
Wood, David Jr.

P.O. Box 638, Montrose, Colorado, 81401.
August 7, with Robert McDaniel.

Woods, James W.

Waterflow, New Mexico, 87421. July 29,
with Robert McDaniel.

Wright, Mr. and Mrs. Ora

General Delivery, Farson, Wyoming.
August 11, with Steven K. Madsen.

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