

Our Public Lands

Winter 1966

Season's Splendor

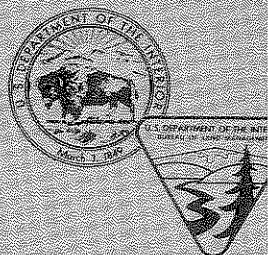
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U.S. Park Service photo.

OUR PUBLIC LANDS

Winter 1966, Vol. 15, No. 1



DEPARTMENT OF THE INTERIOR
Stewart L. Udall, Secretary
BUREAU OF LAND MANAGEMENT
Charles H. Stoddard, Director

Created in 1849, the Department of the Interior—a Department of conservation—is concerned with the management, conservation, and development of the Nation's water, mineral, forest, and park and recreational resources. It also has responsibilities for Indian and territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are conserved for the future, and renewable resources make their contribution to the progress, prosperity, and security of the United States and in the future.

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Franklin Bradford, Editor.

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News Highlights

Blasts Create Waterfowl Ponds

BLM has blasted stagnant northern Minnesota bogs on the public lands there to provide new and improved habitat for waterfowl. The areas were blasted with ammonium nitrate, producing holes from 15 to 30 feet across and from 2 to 6 feet deep. After filling with water, these "potholes" provide new nesting sites for mallards and other waterfowl. The blasting method has been tried with some success in other parts of Minnesota as well as in Wisconsin and Michigan. The experiment will be evaluated by the Fish and Wildlife Service over the next few years. If the blasting method helps increase waterfowl production in this area, the practice will be extended to other BLM administered land in the State.

Job Corps Center Dedicated

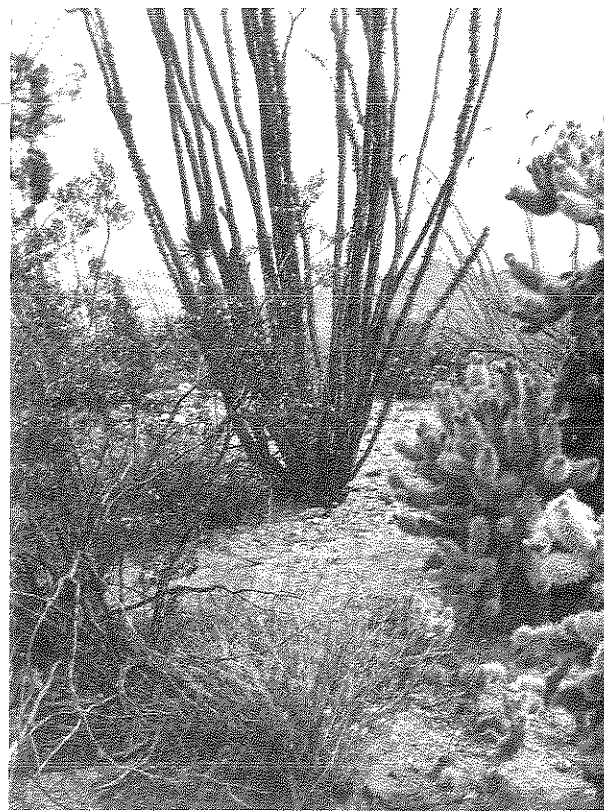
The Mountain Home (Idaho) Job Corps Conservation Center was dedicated November 20, 1965, with Assistant Secretary of the Interior Harry Anderson as principal speaker.

"Hot Spotter" Detects Fires

An infrared "hot spot" detector that zeros-in on sources of potential fire has been developed by Electronics Engineer Wayne Gilbert of BLM's Portland, Oreg., office and is being tested by forest fire fighters. Weighing less than 1 pound and built into a flashlight-type container, the "Hot Spotter" detects by sensitivity to the infrared spectrum. It can seek out a glowing ember the size of a cigarette tip at a distance of 10 feet and a direct flame from 20 to 30 feet. Large trouble spots, such as beds of live coals, can be found at distances up to 50 feet even when obscured by smoke. The detector signals a "find" by a shrill whining sound. BLM officials expect the unit to be valuable for mopup work following forest fires, especially along the edges of a fireline.

New Land Records System

The Bureau of Land Management is modernizing its land records system to better serve local governments,



Can the desert take the heat off the demand for more recreation space? In the vast desert lands of the American West, say Charles H. Stoddard, director of the Bureau of Land Management, U.S. Department of Interior, lies a whole new frontier in recreation, recognized by only a few but teeming with fascinating flora and fauna, strange splendor and rugged challenge.

the oil and gas industry, State and Federal agencies and other users of the public lands. Colorado is the newest State to install the new system. Others now using it are Utah, Arizona, Montana, Nevada, New Mexico, Alaska, and Wyoming.

Magazine's Circulation Climbs

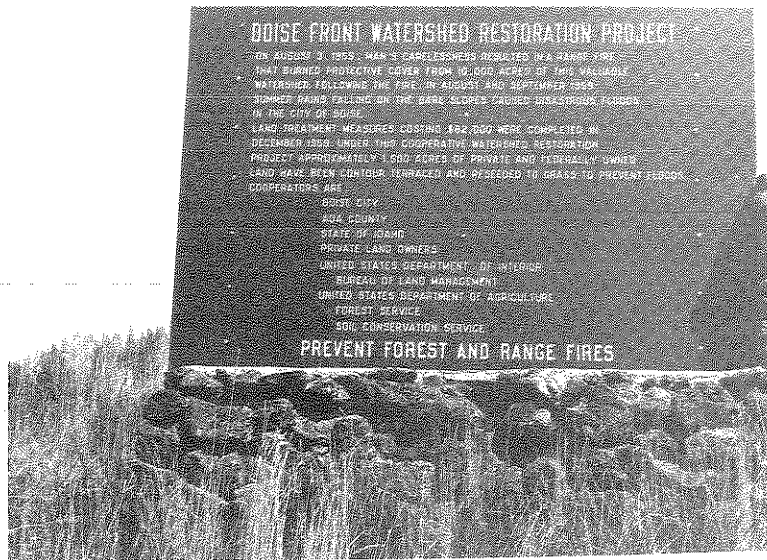
Paid circulation of *Our Public Land* approached 103,000 on November 1, according to the Government Printing Office. The figure represented an increase of nearly 3,000 since August.

The magazine is available on subscription from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. for 60 cents a year.

Building Contract Awarded

Contract for construction of a combined forest fire control training station, engineering headquarters warehouse, and repairs facility near Anchorage Alaska, was authorized by the Bureau of Land Management recently.

BOISE'S BALM FOR BURN



Today this sign stands at the entrance of the Boise Watershed area.

By Robert D. Martin
Portland Service Center
(Former Idaho Range Conservationist)

A watershed ravaged by fire and torrential rainstorms can make an impressive comeback—but not without man's help. The cooperation of Federal and State agencies with local government and private landowners has proved this in making the Boise front a showplace for good land management.

On August 3, 1959, two small grass fires started on the steep slopes of the Boise watershed, just outside the city limits of Idaho's State capital. Nearby residents were not concerned; the area had burned before with little damage. Prompt action soon had one of the fires out.

But the other fire raged out of control. It swept up the ridges to burn about 9,500 acres. Loose granitic soils were laid bare as the protective grasses and shrubs went up in smoke.

Then came the sad sequel. A sudden summer rainstorm struck the fire-seared area on August 20, bringing tons of mud, rock, and debris washing down into the streets of Boise, causing damage estimated at more than half a million dollars. While city officials gath-

ered forces to clean up the mess, BLM, Forest Service and Soil Conservation Service officials began to prevent another disastrous flood. But they could get their plans into action, rainstorm September 22-26 caused additional erosion of watershed and more flooding in the city.

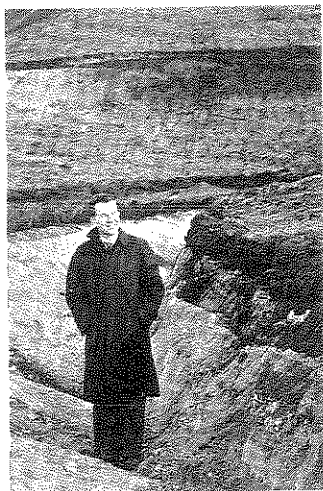
Now the need for immediate treatment of the shed was critical. Obstacles of divided land ownership and money were overcome through cooperation of the BLM, USFS, Soil Conservation Service, city, county, State and private interests. Men and equipment were at work constructing contour trenches and furrows, seeding grasses, and building protective fences. Strong agency cooperation prevailed throughout the planning and operation of the project.

Nearly 1,500 acres of the upper drainages were treated with large trenches measuring 2 feet deep and 10 feet across. Smaller furrows, following contour lines, were built on another 134 acres. In addition, seeding perennial grasses on the barren slopes, planting legumes and browse plants to help hold the soil along the newly built trenches and furrows. Soil drills were used to plant approximately 1,100 tree seedlings to perennial grasses. Tree seedlings were planted in some of the upper trenches. In all, 7 miles of

The story of the Boise front watershed



Fire that swept the Boise Watershed denuded the ground, leaving it exposed to damaging floods that were to follow.



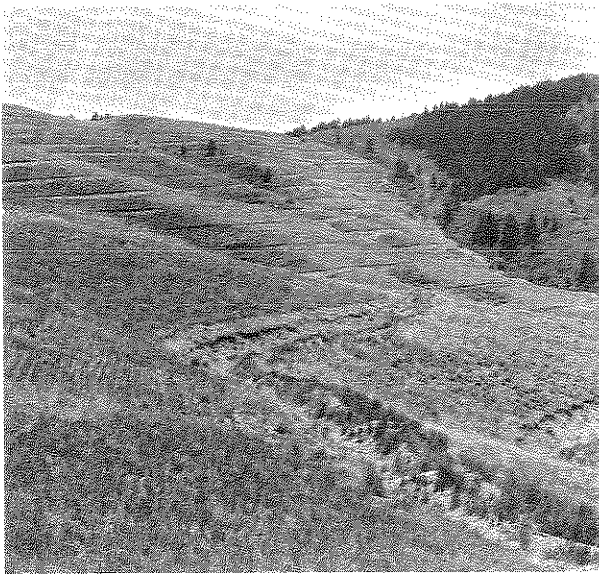
The system of erosion control was extensive and included the upper watershed.



Floods washed tons of mud off the barren hillsides, creating a disaster for the city of Boise and area.



Repairing the landscape so to prevent recurrences of floods became the No. 1 project the whole community.



As the restoration work continued, the watershed improved. Maintenance is necessary, and some work remains to be done but the big problem appears to be licked.

were constructed around the area to protect the treatment. When the last seed was in the ground and the last staple driven, more than \$165,000 had been spent cooperatively on practices aimed at preventing future flood disasters of a similar nature.

What are the results of this effort? A good many Boise residents would be quick to point out that they haven't had water in their basements since. The trenches have withstood the water run-off from rain and snow. Grasses, legumes, and browse plants have become firmly established in the trenches and furrows. The seedlings have developed a good protective ground cover and seem to be thriving. Even the springs and small seeps are flowing once again.

The watershed was put to severe test in February 1963. A quick thaw followed by heavy rains filled the furrows and trenches with water. Another disaster appeared in the making, but the watershed met nature's challenge. The contour trenches held. Vegetation helped to prevent the destructive soil erosion which might have occurred. The damage which might have resulted without preventive treatment cannot even be estimated.

As a result of initial success in controlling the potentially destructive runoff of snowmelt and heavy rainfall on the Boise front, further work is being planned which will include other drainages. Some maintenance work on trenches and furrows is necessary each year to prevent weakened areas from developing into major breaks.

Heavy rains in December 1964 and again in January 1965 caused some rupturing of trenches, washing of valuable topsoil. Emergency forces were called into action to patch and reinforce to prevent serious destruction. Although some minor flooding occurred within Boise city limits, regular maintenance crews, with the help of volunteers, were able to bag vital areas and channel excess water into ditches and canals leading to the river. Again, major damage was averted.

With the activation of a 200-man Job Corps Conservation Center at Mountain Home, a community of 10,000 located about 40 miles from Boise, plans are being made to intensify rehabilitation efforts on the Boise watershed. The access road leading into the area needs water bars, culverts, small bridges and grading. Improved forage is needed for deer which winter on the open ridges and south-facing slopes. All of this takes time, manpower, and money but land managers are confident that such conservation practices pay off with interest.

They point out that prompt and intensive treatment of the watershed prevented a recurring disaster and demonstrated the results of close cooperation among Federal, State, county, and municipal agencies and private landowners in a common cause. Through their joint efforts the public has become more aware of the damage created by wildfire. This has resulted in greater cooperation in fire prevention and control. And most important of all, the watershed treatment itself is a success for it has adequately performed the tasks expected of it. This is conservation in action.

One year after treatment, the Boise Watershed was a monument to the courage and leadership that restored it.



LAST SUMMER IN ALASKA a crew of parka-clad BLM surveyors faced problems that would stagger the best of the sourdoughs. They were handed the task of running boundaries on 1.5 million acres near the Arctic Ocean just east of Point Barrow. Their assignment covered a chunk of land about the size of Delaware—but a whale of a lot colder.

Strange as it may seem, one of the problems they faced was the antics of the midnight sun. During the day when the sun was high, weird mirages loomed up over the tundra. Mounds of ice and thawing permafrost seemed to be floating in midair. This atmospheric distortion made it impossible for the cadastral engineers to measure angles with their theodolites. They solved the problem by doing most of their work at night when the sun was low on the horizon. Around midnight the air was not so crazy.

This is not an invader from outer space, but a BLM surveyor turning an angle with a theodolite near the Arctic Ocean. The other instrument is a Tellurometer used to measure distance by radio waves.

BLM crew burns midnight sun to run lines on 1.5 million acres near Arctic Ocean

Surveying is COOL, Man

By Elmer W. Shaw
Resource Utilization Specialist





Aerial view shows the type of terrain encountered by the Arctic surveyors.

Job Done in Record Time

In spite of frigid weather and nightmare mirages, the 14-man crew finished the job in record time. They covered the whole 1.5 million acres in only 5 weeks.

This feat was made possible by using the latest in modern equipment and techniques. For example, the Arctic surveyors used planes, helicopters, tellurometers, IBM computers, shortwave radio, hoversights, and theodolites.

Much of the credit for the success goes to helicopters equipped with hoversights (a system of prisms that enables the chopper to hover vertically over a point on the ground) and the hydrodist (an electronic instrument that uses radio waves to measure distance). This new method of surveying land was first developed by the U.S. Geological Survey and later improved and adapted to Alaskan conditions by the Bureau of Land Management.

The man in charge of the rugged party was Jerry Ives, a graduate engineer from the University of Nevada. According to Jerry, the biggest problem was logistics. All the equipment, aviation gasoline, oil, rations, and camping gear had to be flown to the sites last winter so that the planes could land on solidly frozen lakes to unload. Here in the outdoor deep-freeze the supplies remained safe and untouched until about July. By that time mud and slush were becoming a nuisance.

Jerry also remembers a few tense moments when his float plane had to land among icebergs just off the Arctic coast. Another memory is the caribou meat

he ate. He remarked later, "By the end of the I was getting mighty tired of caribou for camp

Land Goes to the State

The main purpose of the survey was to establish boundaries so that the area could be transferred from the Federal public domain to the State of Alaska. Under terms of its entry into the Union in 1959, Alaska was granted the right to select more than 103 million acres within 25 years. Because of the North American potential for oil and gas, this is one of the tracts the State has selected.

On the surface, the bleak land looks worthless and hostile. It lies north of the Brooks Range, near the Naval Petroleum Reserve, about 125 miles from Barrow. The terrain is flat and barren, with less than 6 inches of moisture a year; but it is home for thousands of wandering caribou and a few Eskimos. The landscape is dotted with countless lakes and ponds that thaw only partially, even under the 2 months of continuous summer sun. Air temperatures seldom rise above freezing.

The Arctic is a hard land—almost dead—but perhaps oil and other resources may bring it to life.

Jerry Ives, party chief of the surveying crew, checks a gyroscopic device used to determine true bearing when it is too cloudy for sun shots.



Grazing "Granddad" Keeps Busy

By Franklin Bradford
Our Public Lands Editor

Mizpah-Pumpkin Creek Grazing Association, granddad of orderly grazing on the western range, is still going strong.

Pilot model for the Taylor Grazing Act of 1934, the old grazing organization domiciled in southeastern Montana will be 38 on April 20 next. Its illustrious founders hold the honor of fathering the idea of modern Federal grazing districts.

MPCGA was born of chaotic conditions on some 108,804 acres of grasslands between Mizpah and Pumpkin Creeks, in Custer County, Mont., in the 1920's. A small part of this area had been homesteaded, but most of the homesteads had been abandoned and had "gone back" to the Federal Government, or belonged to banks, mortgage, loan companies, and the State of Montana. The bulk of the ownership, however, was land granted to the Northern Pacific Railway. A severe drought in 1919 and a hard winter of 1919-20 had accelerated the homesteader exodus. By 1926 most of the homesteaders had gone, leaving behind dilapidated shacks, rusty windmills, and scattered sections of fenced property. Gradually, the fences fell, too, probably with the help of local stockmen, and the whole area became a grazing commons of public and private lands, none producing revenue.

Range Overstocked

From this pattern of free range use, the whole area soon became overstocked and overgrazed as hordes of cattle, sheep, and horses were dumped into the area, some from as far away as Texas.

Stockmen were not inclined to lease these lands, first, because they were using them anyway without cost, and second, the public and private lands were so interspersed that fencing of privately owned lands into a range large enough to support a reasonable herd would necessitate illegal fencing of public domain.

By 1926 conditions were chaotic. Evan W. Hall, agricultural development agent for the Milwaukee Rail-

road, and Paul Lewis, Custer County extension agent, approached some of the leading ranchers, including Nic Monte, and discussed the feasibility of forming cooperative associations to regulate the range use of an area and make it produce revenue. Monte soon interested other ranchers, one of whom, William Tonn, had been working with neighbors on a similar idea. This small group proceeded to formulate a plan by which an association would lease or otherwise gain control of the lands and reapportion grazing on a permit system. Eastern Montana's congressional representative Scot Leavitt supported the idea immediately. Later, it had the backing of Senator Thomas J. Walsh, who pushed enabling legislation through Congress 2 years later. Under the law, the district was to be conducted on an experimental basis for 10 years. It provided that MPCGA was to lease the lands from the U.S. Department of the Interior.

Formal Organization

Mizpah-Pumpkin Creek Grazing Association was formally organized at Beebe, Mont., on April 20, 1928. Minutes of the meeting show about 25 persons attended. Calvin Todd was elected chairman and Nic Monte secretary. Article II of the constitution and bylaws reads: "The object of this association shall be to promote and protect the business of raising livestock upon and adjacent to the Mizpah-Pumpkin Creek grazing area as described and designated by Act of Congress; to work in cooperation with the proper departments of the U.S. Government, State, private corporations, and private landowners included within the said grazing district created by said Act of Congress, and to do any and all other things lawful, just and necessary to further the interests of this association in grazing and related matters and otherwise connected with the livestock industry, but, subject, however, to such rules and regulations as may be, from time to time, prescribed by the Secretary of the Interior."

Calvin Todd was elected president, S. E. Heren vice president. Charter members were: S. E. Heren, William Tonn, C. Frandsen, Louis Bircher, Frank Bircher, Jacob Bircher, Tom Dykes, Ernest Stewart, Alex Mc



Nic W. Monte

Charter Members of the Mizpah-Pumpkin Creek Grazing Association in southeastern Montana.



Frank Bircher

Cullough, Seidentoph & Co., Ed H. Damm, C. O. Hagen, John Ogren, Calvin Todd, and Nic W. Monte. Monte, Ed Damm, and Frank Bircher now reside at Miles City; Hagen and Stewart reside in California; McCullough lives in Hardin, Mont.; Jacob Bircher operates a motel in Lincoln, Mont.; and Dykes is reported to be living in Arizona.

Early members of the association, but not charter members, included William Blum, Frank Damm, the Hogg Estate, and Charles Wiley.

The association started with an executive board of seven, later reduced to three. The original grazing fee was not to exceed \$1 per head for the grazing season with an additional 50 cents per head for range improvement. The carrying capacity of the range was determined as accurately as possible and permits were issued to members by a board of three directors. Originally, each permittee was required to develop one watering place for each hundred head of cattle.

The State lands, for the most part, were leased by the Mizpah-Pumpkin Creek Grazing Association. The association still holds the leases on some of the State lands.

The association offered to pay taxes on private lands for the privilege of using them. That may not appear

to be much of an inducement, but at that time the was losing money on his investment. This arrangement made it possible for him to break even—with the use of improvement of his properties. The association also purchased 2,600 acres which had never before been in Custer County.

Ickes Impressed

The success of the grazing district plan was so apparent as related some time later by then Secretary of the Interior Harold L. Ickes:

"The result after 3 years is that there is twice as much grass on the Mizpah as before, although the carrying capacity has been increased from 3,000 to 5,000," Ickes wrote.

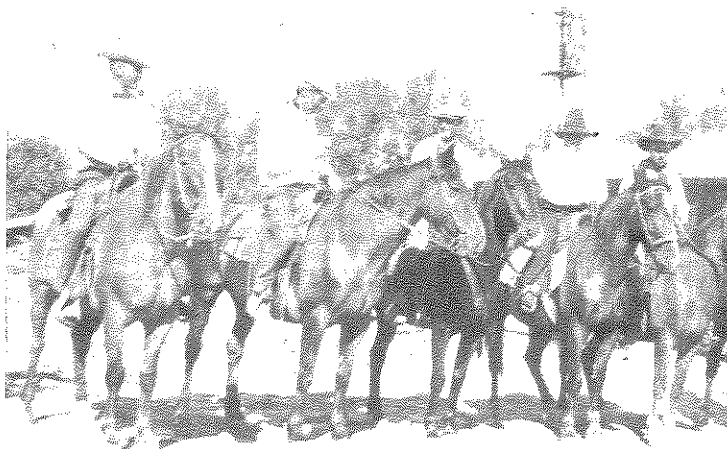
Came 1962 and time for another renewal of the Taylor Grazing Act. By this time the Taylor Grazing Act was well established and successful. The Government was convinced that the grazing district had properly served its purpose and that there was neither need nor legal basis for terminating the lease. On November 21, 1962, at a meeting of the association, BLM answered the association's application for lease renewal with an explanation that the Taylor Grazing Act of 1934 was adequate to govern grazing conditions and should prevail. After 6 years of association members agreed to accept individual grazing permits, but chose to maintain their association.

For the grazing association to yield its autonomy was not altogether painless, yet members were grateful and cooperative, as they have continued to be as individual permittees. They chose to keep their association intact. Regular meetings are held and range improvements receive attention in close harmony with the BLM office at Miles City, Mont.

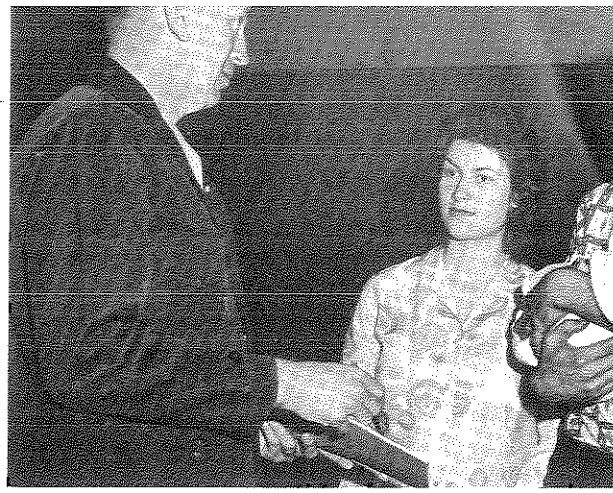
Officers of the association today are Boyd Blum, president; Frank Damm, vice president, and Helder H. Blum, secretary-treasurer, all of Miles City.

Only one ranch unit today is in the hands of a charter member. It is the William Tonn & Sons, composed of the William Tonn, Nic Monte, and Armand Hagen units. Mr. Tonn died on Thanksgiving Day, 1964, at the age of 89.

Left to right: Nic W. Monte, William Tonn, Alva Simpson, Alex McCullough, Armand Tonn and Congressman Scott Leavitt pose for this picture (1926 or 1927) at the McCullough Ranch, where they stopped overnight on a grazing tour of the proposed Mizpah-Pumpkin Creek Grazing Association area.



George Gustafson, BLM townsite trustee, discusses property problems with a young family of homesteaders at Dillingham.



New Address For Dan Okomailuk

**Cooperative urban program gives
Alaskans legal title to homesites**

By Elmer W. Shaw
Resource Utilization Specialist

"Alqusix ulag!!! Where's my house?" asked Dan Okomailuk.

Dan, a native Eskimo, had just returned to Barrow and discovered his house was gone. Someone had moved it away.

When a neighbor guided him to the relocated dwelling, he was delighted with its permanent location. It now faced a straight new street 60 feet wide instead of a zigzag dog trail. The whole layout of Barrow had been remodeled by Bureau of Land Management engineers—in cooperation with the State of Alaska, the Bureau of Indian Affairs, and the University of Alaska. More important the happy Eskimo could now get legal title to the surveyed lot on which his house now stood.

This change-over from century-old squatter's rights on public domain to personal title is planned by BLM for some 200 small settlements and native villages throughout Alaska. The inhabitants of 82 towns and cities already have title to the land on which their homes are built.

One of the men in charge of this program is George Gustafson, BLM's only townsite trustee. In fact, his

townsite job is the only one of its kind in the 50 States. Only in a few countries would you find such an abrupt change from a peaceful stone-age culture to all the headaches of urban planning.

Barrow Is Example

Barrow, centuries old and jet age new, is a good example of this transition. It is the largest and northernmost Eskimo settlement in the United States. Some 1,500 Eskimos, 100 whites, and 1,000 howling sled dogs live here in a strange confusion of the old and the new. Many of the houses are heated by natural gas. Some have wall-to-wall carpeting, washing machines, and electric appliances. Modern Eskimos use skin boats equipped with outboard motors. Yet for sewage disposal, they cart away oil drums filled with human waste and garbage.

Until recently, changes in the Eskimo way of life at Barrow came slowly. Ancient traditions and practices were taught orally and handed down from generation to generation for more than 15 centuries, for the Eskimo had no written language. Archeologists have found evidence that Eskimos lived in the Barrow area as early as A.D. 600.

In Anchorage, urban planning got off to a much better start. Now Alaska's largest and most modern city, it had its beginning as a railroad construction camp in the brush alongside Ship Creek 50 years ago. On June 22, 1915, the U.S. Department of the Interior granted



Eskimo women butcher oogruk seals in an improvised slaughter house along a street in Barrow.

a special 347-acre townsite to help in building the Alaska Railroad. City streets and lots were surveyed and laid out in conventional rectangular patterns before any buildings were erected.

Back in those days fire in the surrounding forest and brush was always a real threat. To guard against this danger, the townsite planners designed Anchorage to include a blockwide firebreak along the exposed edge of town. The city has grown so large that the old firebreak is no longer needed. Instead, the open area has become the city park between 9th and 10th Avenues.

In 1956, 41 years after the townsite was granted, Anchorage won the title of "All American City" in a contest sponsored by Look Magazine. Advance planning has paid off in other ways, too. Now that Anchorage area population exceeds 100,000, even more planning is needed to cope with suburban sprawl.

Village Seeks Status

By way of contrast, Tanacross is quite a different type of townsite. This little fishing village on the banks of the Tanana River, 200 miles southeast of Fairbanks, is populated by about 100 native Athabascan Indians. For centuries these resourceful natives have lived on an economy of salmon fishing and fur trapping, with no real thought of who held title to the land. In 1955, the chief of the Tanacross Indian Village held a council and they voted to apply for townsite status.

Townsite trustee George Gustafson's draft of the townsite layout was approved by the village council. Bureau of Land Management engineers surveyed the village and prepared a plat. The trustee applied for patent, and, upon its receipt, issued deeds to the occupants of the lots. Sufficient vacant lots were surveyed to accommodate newlyweds wishing to build their own homes.

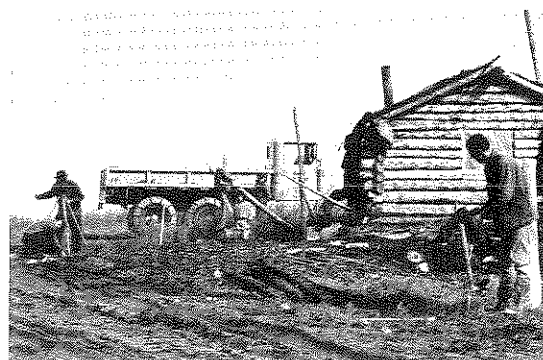
After all the lots in a townsite have been deeded, the trustee's job is done and the fledgling community

begins keeping its own records. The trustee missed and copies of his records are sent to the clerk, if the town is incorporated, and the originals are sent to the Records Center in Washington, for safekeeping.

From a historical standpoint, Skagway and its famous townsites. On June 28, 1900, Skagway came the first incorporated city in Alaska. Population of the gold-rush boomtown then was more than 10,000, making it the largest town in the Territory.

The history of Skagway began in 1896 with the Klondike gold discovery in the Yukon Territory. Overnight it became the main port of entry for the Klondike gold fields beyond. It was the great stampede, only the little cabin of Captain William Moore marked the site of Skagway. Like other gold-rush towns, its glory soon passed. By 1900 only 659 people lived there.

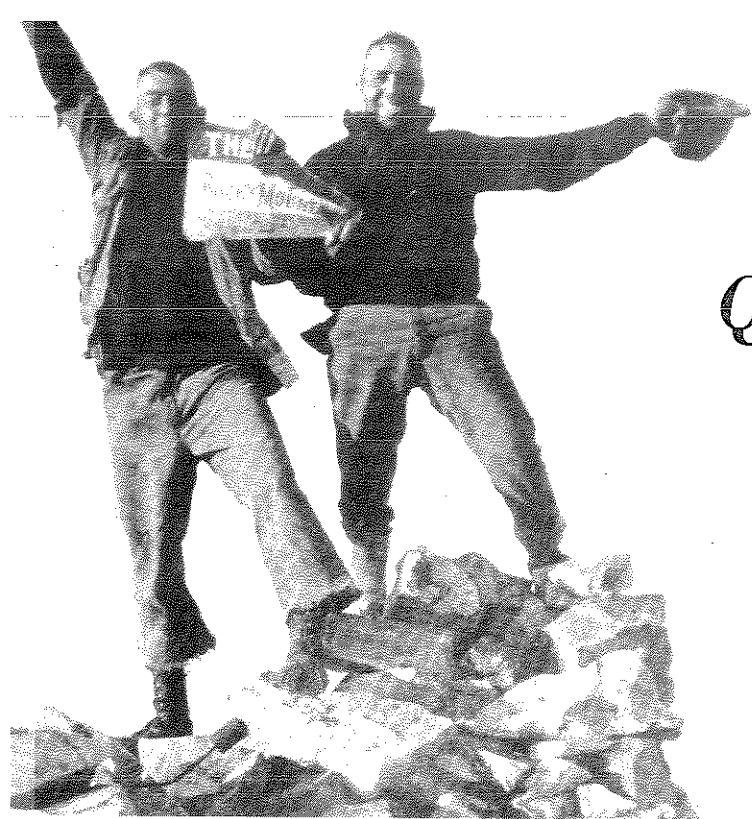
Eagle also was spawned by the Klondike stampede. Incorporated in 1901 under a charter signed by President Roosevelt, it was the second townsite established in frontier Alaska. Located on the Yukon River near the Canadian border, it was the port of entry and customs office for river traffic headed to and from Dawson City, the Klondike.



Here a crew runs lot lines on a street in Kiana Village.

In its heyday, the lusty young city boasted a population of nearly 3,000 eager pioneer men, and many women. Like Skagway, it dwindled to almost a ghost town when the Klondike gold gave out. Today it is a fascinating tourist attraction in summer, but its round population has dropped to about 20 people, mostly retired miners and colorful old sourdoughs.

Modern Alaskans are finding that title to land can help them get a loan, establish credit, meet Federal requirements, will property to heirs, defend land against trespassers, and protect investments in building improvements.



QUIN BLACKBURN

MAN ALIVE!

Jubilant over their mountain climbing success Blackburn (left) and Andy Di Piro pose atop Grand Teton peak on Aug. 25, 1923. Photo was taken by third member of team, David DeLap.

Mountain climber, geologist, forester, surveyor, explorer, land appraiser—Quin Blackburn of the Idaho State BLM organization has packed a lot of outdoor living, and plenty of thrills, into his lifespan of 60-plus years.

Quin hardly had all of these things in mind when he graduated from a Minnesota high school and headed west. Yet, it was inevitable that a young man of vision, courage, ambition, and honesty would accomplish outstanding things. He not only was to climb high mountains and explore vast vistas of antarctic tundra; he was to climb the ladder of success in many directions.

During his college years he won fame in 1923 with two other University of Montana students for climbing Teton Peak in Wyoming—possibly the third climbing party to accomplish this feat. A note he left at the summit is now in the Museum in Teton National Park.

But there were bigger things ahead. After spending several seasons as a timber cruiser in the western United States and Canada, Quin joined the first Antarctica Expedition (1928–30) as a topographer. Upon his return, he took post-graduate work in geology at the University of Washington under the eminent tertiary geology expert, Dr. C. E. Weaver. It was on Dr. Weaver's urging

that Quin joined the second Byrd Antarctica Expedition (1933–35) as a geologist.

3-Man Field Party

It was on the latter expedition that Quin, as chief of a three-man field party composed also of Stuart Paine and Richard Russell, trekked 1,500 miles on geological and geographic reconnaissance which attracted worldwide attention. Several hundred pounds of geologic specimens they gathered from Mount Weaver (named in honor of Quin's former mentor), have remained of considerable interest to the U.S. Geological Survey.

The trek of Quin's party was the deepest polar thrust of the second Byrd Expedition, deeper than the longest flight by air. Pushing southward from Little America, they reached within 200 miles of the South Pole. At this point they had ascended Thorne Glacier to the edge of the Polar Plateau, overcoming all geographic obstacles toward reaching the pole. But reaching the pole was not their goal; they sought scientific data.

The party's most dramatic moment is described by Paine in Admiral Byrd's book, "Discovery."

"My team dog sled was in the lead," Paine related. "Blackburn and Russell followed in that order about 50 feet apart. We were going along quite nicely when I felt a sharp shock on the gee pull. Before I quite took in the meaning, I noticed with mild wonder that my dogs were digging in furiously; but instead of going forward, actually we were going backwards. Instinctively, I gathered the tethering pole from the sledge and rammed it home behind the runners. Out of the corner of my eye I saw Russell braking his lead sledge. Blackburn's sledges were nowhere in sight. His dogs were belly down, scraping for all they were worth, and Quin himself was crawling from a hole that had opened right under his feet. There were the two sledges—with all of our navigational and geological gear and a good part of our food and clothing—hanging straight down over a 60-footer (crevass). It took us 7 hours to get them back on the surface. Blackburn and Russell took turns going down on a line and passing the gear back to the surface."

Rear Admiral Byrd, in an article on "Exploring the Ice Age in Antarctica," National Geographical Magazine (October 1935) described the incident in part:

"In one spot, they (Blackburn's party) threaded their way along narrow ice ridges which fell away to bottomless pits on either side. These pits were crevasses on a gigantic scale, resulting from a constriction in the glacial channel. A New York office building could

have been quite easily dumped into one of these cl with enough room left for a good-sized ocean I

Dogs Hung by Paws

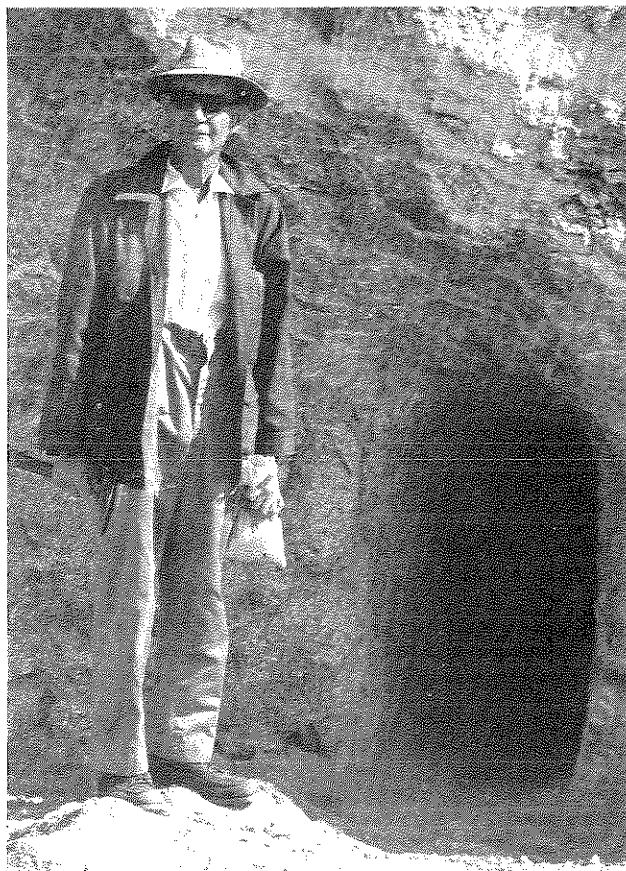
Today Quin is philosophical about his Antarctic experiences. His most vivid recollection, he says, is the sight of two sledge dogs hanging tenaciously from the edge of the crevass by their front paws.

In more recent years, Quin has devoted full time and talent to his job as geologist for BLM, where his fair handling of "problem" cases involving Federal laws and regulations has attracted great respect. Today he counts friends by the thousands in all parts of Idaho and elsewhere.

A good student with a sound memory, Quin's official reports are always well supported by the law and regulations governing the cases involved. Some years ago, Mike Solan, now land office manager in New Mexico, was unable to find authority for a recommendation made by Quin. When asked about the authority, Quin replied, "I could find no authority against it." The case was duly processed.

He has a penchant for writing long and detailed reports, resplendent in detail and analytical questions of fact and law.

Quin Blackburn—man of unusual talents and dramatic experiences—man alive!



Sampling mining claims to help determine validity has been one of Blackburn's many

REST CURE *for* "TIRED" GRASS

By Floyd E. Kinsinger,
BLM Range Scientist

ANCIENT AND MODERN FARMERS have used crop rotation to resuscitate the land and maintain a higher level of crop productivity, especially in the arid regions.

Now this new-old principle is being tested by the Bureau of Land Management as a means of increasing grass production on public domain lands in western United States.

"Rest rotation" is but one of several tools BLM is using to make grazing lands yield more grass for livestock and wildlife and provide better watershed protection. It goes almost without saying that increased forage production and greater ground surface cover protect the watershed, add scenic beauty to the landscape and enhance recreation opportunities. These are BLM goals under multiple-use land management authorized by Congress last year.

Rest-rotation on grasslands is beyond the experimental stage, yet its full value remains to be evaluated from pilot tests now underway. Up to now, most research and practical application have been done by the U.S. Forest Service. Now it gives bright promise of making the BLM-administered ranges a better place for man and beast.

This plan of grazing, based primarily on growth requirements of important forage plants, means "rest" for the plants during a critical part of the growing season—in some cases all of the growing season. This permits the plants to regain vigor lost as a result of grazing, or other causes, and provides a seed crop for replenishing the range.

Rest-rotation is applied simply by moving livestock from area to area during the grazing season, thereby giving designated portions of the range respite from the nibbling herds. This can be accomplished primarily by proper fencing; in some cases, by control of livestock water. During the "rest" periods, the plants gain time needed for a new thrust of growth before the livestock are permitted to return to the "rested" area.

In addition to recapturing their vigor for new growth the grasses yield a better crop of seed which, in turn, is planted by hooves of the returning animals. This brightens prospect for perpetuation of the grass crop. It also means better control of undesirable grass species. Increased production and reproduction of forage plants mean greater range capacity for livestock and wildlife, also protection of water resources, plus all the aesthetic benefits to man.

Rest-rotation pilot projects are being established in each of BLM's 50-odd grazing districts. By testing the system under many combinations of soil, vegetation and climate, range experts hope to attain a dependable evaluation of the results. For one thing, the tests should give definite clues as to conditions necessary for the success of the method.

As a tool of range management, rest-rotation can be successful only in the degree of cooperation between the Bureau and the range user. Each of the rest-rotation projects established to date has been developed cooperatively by the user and Bureau technicians.

When the grass has been sufficiently grazed, it is time for the cattle to move on to "greener pastures," giving the grazed grass a chance to regain its vigor.

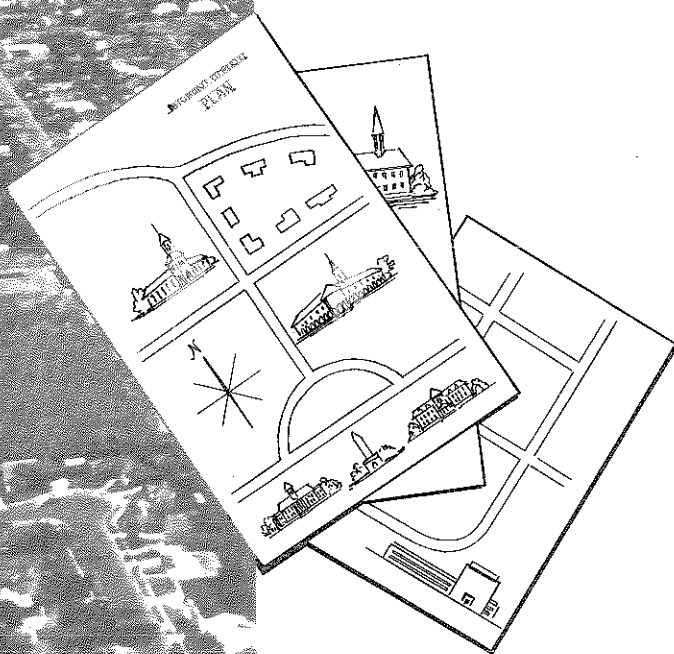


An aerial photograph of a city grid, showing streets, buildings, and parks. The image is in black and white and has a grainy, high-contrast appearance.

LAND

FOR A PLAN

*By Irving Senzel, Chief
Division of Lands and Minerals*



Orderly development will be a watchword in the expansion of communities, towns and counties buying public lands under the new Public Sale Act.

THIS MIGHT BE a good time to "decentralize" the megalopolis along the Eastern Seaboard and start a new land boom in the West.

BLM is ready to sell "growing room" to towns, counties, communities, individuals, corporations, and associations showing a desire to avoid future "slurbia."

Unfortunately for the overcrowded East, you can't shuffle real estate around. You can't move "growing room" in the West back to relieve overcrowded suburbs in the East. So, the sale of public lands for community growth and expansion can help only those communities located where the public land is. And that's mostly in the West.

Secretary of the Interior Stewart L. Udall has approved rules under which the Bureau of Land Management will sell public lands "required for orderly growth and development of a community, or lands chiefly valuable for residential, commercial, agricultural, or public uses" as authorized by the Public Land Sale Act of 1964.

Zoning Necessary

The Secretary's rules specify that local governments must adopt "comprehensive plans" for orderly growth and expansion, and that planning must be given the force of law through adoption of "adequate zoning regulations." Further, the rules recognize the law's specific instruction that "no sale shall be conducted under the authority of this Act until zoning regulations have been enacted by the proper local authority."

The opportunities and responsibilities of local governments also were expressed by U.S. Representative Wayne Aspinall: "The burden is now on the local communities to act affirmatively in establishing comprehensive zoning regulations where they do not already exist. These zoning regulations and other local ordinances should not only be concerned with the type of use to which land is put, but they should also be concerned with the type of construction and the assurance of access through reasonable roads and streets, the availability of adequate utilities including water and sewerage, and provision of usual municipal service including trash and garbage removal. The development of many western communities depends upon making public lands available for non-Federal use. Whether they will be offered for sale under this legislation is now squarely up to the communities themselves."

Cooperation between local government and BLM is a key to success of the program. More than a year

ago BLM representatives met with officials of the National Association of Counties, the American Municipal Association (now the National League of Cities), the U.S. Conference of Mayors, and the Council of State Governments. Out of that conference came joint statement: "We recognize that effective cooperation is a two-way street and pledge the full cooperation of our respective organizations in a concerted effort to create a climate of willing cooperation among the local governments in the West."

Tests Show Need

BLM's groundwork for establishing workable cooperative procedures with local governments has included actual testing in 10 counties selected for their variety of conditions and situations. Major emphasis was placed on coordinating land-use planning of BLM district managers with officials of local governments. Results evaluated in the spring of 1965 showed that cooperative program was both feasible and needed.

Before lands may be sold under the Act, they must be classified. Simultaneously with issuance of public sale regulations, Secretary Udall issued rules activating the Classification and Multiple Use Act of 1964. Testing of classification procedures under this Act, and related act, is now proceeding in prototype counties. It involves public hearings to help identify public lands that should be sold.

BLM will not attempt to prescribe a fixed standard for "adequate" master plans and zoning. The Bureau recognizes a great variety of circumstances and problems facing local governments. Practical standards which carry out the intent of the law can be developed through close consultations between a community and BLM.

Once land has been sold, local governments enforce the zoning.

Highlights of the Public Land Sale Law

The law will be most beneficial to the 10 Western States because that is where most of the public lands are.

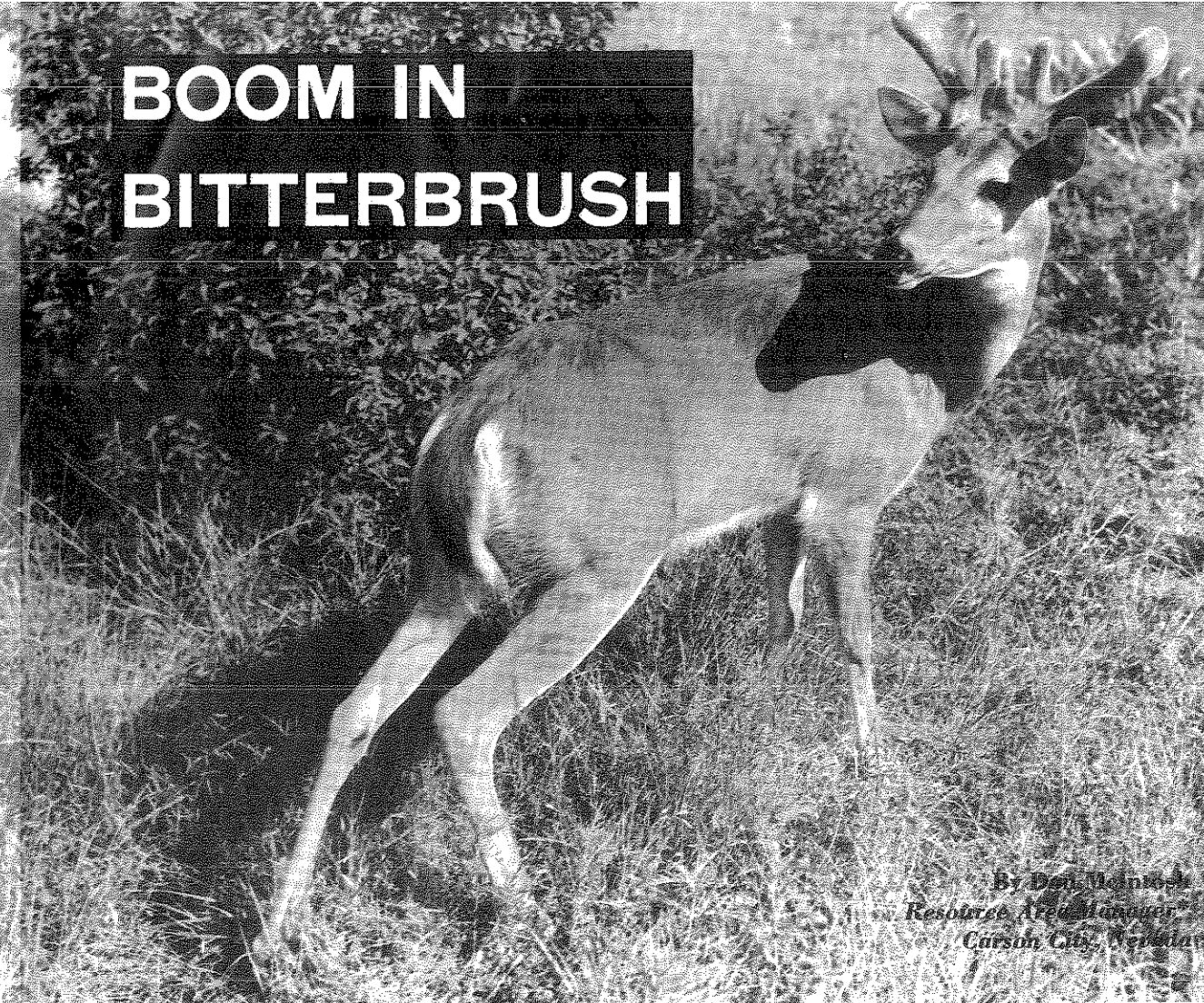
States, counties, cities, towns, and other local governments can buy land at its appraised "fair market" value.

Private individuals, associations, and corporations bid for lands at public auction.

Lands will be sold in tracts not exceeding 5,120 acres in size.

Zoning regulations must be in effect in the area in which the land is located before a particular sale may be consummated.

BOOM IN BITTERBRUSH



By Don Heinisch
Resource Area Manager
Carson City, Nevada

Eating habits of big game can be a factor in future management of wildlife areas.

In 1964, representatives of Nevada's Fish and Game Commission, the University of Nevada, and the Bureau of Land Management set out to find answers to some important questions. Among them:

"How much competition is there between livestock and big game on the public lands?"

"What is the effect of sagebrush control (usually considered beneficial to livestock) on big game?"

"What do deer eat at different seasons?"

"How important are water developments in the distribution of big game?"

Best place to map out a research program, they

*At the time this article was written, the author was BLM's wildlife specialist at Reno.

agreed, was the University of Nevada. So they l up their question box and headed for Nevada Ag tural Experiment Station, where they immediatel the help of an energetic young researcher and ecologist, Dr. Paul Tueller.

Dr. Tueller first searched literature on big ecology to determine what had been done and could be used as foundation information. Th constructed a comprehensive research plan which bore approval signatures of the director of the E ment Station, director of the Nevada Fish and Commission, and State director of the Bureau of Management. "Evaluation and Management o Game Habitats," as a major research project, w the ground.

RESEARCHERS FINDING

SOME ANSWERS IMPORTANT TO HABITAT MANAGEMENT

Objectives Defined

Its principal objectives: (1) To evaluate potential forage production, condition and trend in selected big game habitats throughout the state; (2) To determine the degree of dual use and competition with livestock on these key areas; (3) To determine characteristics of deer feeds—palatability, nutrition, species preference, etc.

The research plan gave each of the three participating agencies certain duties and responsibilities. All jointly would select study areas, make inspections, collect data, and review results.

By spring of 1965 things were rolling. The study areas were selected and BLM began construction of the exclosures. Wildlife technicians began collecting deer for study. Dr. Tueller and his research assistants began collecting and evaluating data. It is too early to draw any conclusions—but the study already has produced some interesting information.

Several years ago BLM and the State Fish and Game Commission conducted a joint habitat improvement project on an important deer winter range near Wells, Nev. It was a "chaining project;" that is, mature pinion and juniper trees were pulled down by tractors dragging heavy anchor chain. Purpose was to promote growth of deer forage plants by eliminating competitive, moisture-hungry trees.

Did it accomplish this?

Dr. Tueller's researchers moved in to compare forage production and deer-use on the chained area to production and use on the adjacent untouched area. The data was preliminary, but it indicates * * * "that yield (growth) of bitterbrush (an important deer food) had increased three times in the chained area. We did not measure it, but we estimate that perennial grass yield (annual growth) was increased 10 times." Deer activity index figures (pellet group counts) showed that deer used the area $2\frac{1}{2}$ times as much as the surrounding unchained area.

Deer and Livestock

In another region of Nevada, on an important deer range, preliminary data was collected from one of the recently constructed two-way exclosures. (A two-way exclosure is a fenced area that excludes deer and livestock from half of the area and excludes livestock only from the other half.) Dr. Tueller's group collected data within each portion of the exclosure and data from the area adjacent to the enclosure used by both deer and livestock. He reported that * * * "the data indicates that prior to August 1963 deer utilized 70 percent, while deer and livestock consumed 92 percent of the annual bitterbrush production."

Another part of the study is designed to determine more about food habits of deer, what parasites infest them, and general health in relation to the range. To do this, deer are collected and completely examined.

The big game habitat research project will continue for several years. Conclusions cannot be drawn from preliminary findings, but already there is a hint of much useful information.



Research technicians of BLM and the University of Nevada collect forage production data on public lands in the Ely District.

FRAIL LANDS, we call them—lands in the advanced stages of erosion, shattered by the forces of wind and water, most of them as bare as Old Mother Hubbard's proverbial cupboard. The Bureau of Land Management estimates that a detailed inventory would identify approximately 50 million acres of public lands in the "frail" category, all in the western part of the country.

How can this deadening erosion be slowed or reversed? How can these lands, comprising an area approximately the size of Kansas, be transformed into more productive watersheds, grazing areas, and scenic beauty? The Bureau of Land Management is taking first steps in a long-range program to treat these lands and restore a measure of soil stability that has been going down the drain for centuries.

Frail lands are found in arid and semiarid areas where plant cover has been broken and surface conditions disturbed. This condition leads to faster erosion. The extent of erosion can be attributed largely to such factors as unregulated past use, drought and the torrential nature of western rainstorms.

Action Required

The Department of the Interior, the Congress, and conservation groups have become seriously concerned. Continuing inattention would be to avoid responsibility. Realistic husbandry requires action.

Over 6 million acres of BLM-managed frail lands are in an extremely hazardous condition. Some are known as "badlands." Another 44 million acres are in critical condition in terms of erosion hazard. But they are critical in the public administration sense also. This acreage may join the extreme category unless rehabilitation is undertaken promptly.

Prime examples of frail lands are found in the "breaks" of the Upper Missouri River Basin. The Mancos Shale areas of the Colorado Plateau are even more severely deteriorated. The public land areas of the Rio Grande drainage are little different. Serious problem areas are found also in the Great Basin and the Columbia River Watershed, although erosion there is not of such magnitude. Each year these areas dump millions of tons of sediments, including immense quantities of soluble salts, into their respective drainages.

Salt pollution in the Colorado River comes from eroding soils of public lands within the Basin. The Basin has a drainage area of 243,000 square miles of which approximately 91,000 square miles, or about 38 percent of the land area, is administered by BLM. Stabilization of highly eroding soils of the Colorado Pla-

Cove Fo Frail Land

By George L. Turcott,
Soil and Watershe



Vast areas of frail lands pose a serious problem in management.

50 million acres in advanced stages of erosion badly need rehabilitation

teau would be a very effective method of reducing both the salt and sediment pollution in the Colorado River system.

The 89th Congress authorized a special \$2.8-million program which will concentrate on soil treatment, watershed management, and vegetation restoration. It will be oriented primarily for controlling soil erosion and downstream sedimentation. This is in full recognition of the delicate relationship between land and water. The method of managing the land affects runoff and the quality of downstream waterflow.

This program will be carried out in three general ways, usually in combination. Grazing management will be aimed toward protection of soils by increasing plant cover. This may mean excluding all grazing during the grass growing season. In some situations it may mean no grazing by domestic livestock and stringent control of big game numbers. Protection of extremely eroded areas may require fencing to eliminate abuse of vegetation. In many such instances, adjacent areas are well suited for intensive forage development. The program calls for treatment of potentially high forage production areas and shift of livestock to them.

Watershed stabilization practices such as contour furrowing, terracing, seeding, deep tillage, soil ripping, brush control, and small check dams will receive considerable capital investment. Such practices are quite effective in reducing over-surface waterflows by providing means for greater infiltration into the soil.

Other steps will be taken for control of excessive channel flows originating on and passing through frail watersheds. These include detention and retention dams, waterspreading projects and similar measures to



Furrowing makes the land capable of drinking up more moisture.



Improved grass production is a strong factor in stabilizing the soil and improving the watershed.

control water in areas where headcutting, gullying and deterioration of soil and moisture conditions are prevalent. Larger water control developments will be constructed only when investigations indicate detention dams are necessary.

BLM is taking a practical approach in these land rehabilitation efforts. Before making substantial capital investments, BLM personnel will evaluate the ability of the land to respond to rehabilitation, recognizing that some areas will not respond to any known land treatment or conservation practice.

The program will be developed in keeping with multiple-use principles. Wildlife habitat needs will be fully considered. Special browse plantings may be necessary in some cases. Water control structures give us an excellent opportunity to provide for waterfowl, upland birds and big game. Special care will be taken to avoid disturbance of natural badland sites primarily valuable for aesthetic uses.

PUBLIC SALE BULLETIN BOARD

This is a compilation of the most up-to-date information possible on transactions and future sales of public lands by land offices of the Bureau of Land Management. Any details on land descriptions, prices, and other information pertinent to sales must be obtained from the individual land offices. When possible, all sales are scheduled far enough in advance so ample notice can be given in Our Public Lands. Any sale listed can be cancelled on short notice, due to many administrative and technical reasons, so interested purchasers should always check with the local land office.

Please note: Adjoining landowners have preference rights to buy "Public Sale" tracts. They can buy these tracts by matching the highest bid within 30 days after the auction. "Small tracts" are handled differently—strictly on a bid-auction basis, one to a party. If you submit the highest bid at auction time, the small tract is yours.

ARIZONA

Public Sale Tracts (sales in planning stage)

Cochise County.—One hundred sixty acres, flat to gently rolling, no utilities, 8 miles west of Tombstone, \$80 to \$100 per acre; three and seventy-five hundredths acres, moderately flat to rolling foothills, 14 miles east of Tombstone, \$5 to \$75 per acre; 186 acres in 2 tracts, rough and moderately flat, no utilities, 17 miles north of Douglas, \$50 to \$80 per acre; forty acres, flat to gently rolling, near U.S. Highway 80, utilities, north of Chiricahua, \$45 to \$60 per acre; two hundred thirteen acres, rough to moderately rolling, good access, no utilities, 14 miles north of Douglas, \$60 to \$90 per acre; one hundred twenty acres, flat to gently rolling, good access, no utilities, 8 miles northeast of Bisbee, \$60 to \$85 per acre; 37.63 acres, flat to gently rolling, no access, no utilities, near Fort Huachuca.



GRAZING PERMITS



ROOM 17



"In Alaska a filing fee of \$10 must accompany each application for a reindeer grazing permit or renewal thereof."

Greenlee County.—One hundred twenty acres, moderate rolling foothills, good access, 1.5 miles northeast of \$60 to \$90 per acre.

Mohave County.—Eighty acres, rolling to flat, no near Arizona-Nevada border, 25 miles south of Mesquite. Estimated appraisal \$850.

Navajo County.—Three tracts, 107.7 acres, 698.4 and 480 acres, undulating to hilly, poor access, no utilities, southeast of Winslow, \$20 to \$30 per acre.

Apache County.—Three tracts, 40 acres, 640 acres, sloping and undulating to semirough and broken, primarily grasslands with scattered juniper, access via highway frontage to secondary ranch roads, utilities at St. Johns, \$25 to \$75 per acre.

Yavapai County.—Forty acres, hilly and surface utilities, 1 mile southwest of Humbolt, ¼-mile from St. Way, \$50 to \$150 per acre; 34.32 acres, rough and hilly, no utilities, 1 mile from Mayer, \$100 to \$300 per acre; 4 rough and hilly, oak brush to pine trees, 3 miles south Prescott, \$800 to \$1,200 per acre.

Yuma County.—Six tracts, ranging from 80 to 600 acres, rough, access by secondary roads, no utilities, \$50 to \$100 per acre.

CALIFORNIA—RIVERSIDE OFFICE

The public land sale program has been assumed on a regular basis, with sales each Wednesday morning at 10 o'clock at the Riverside Land Office. Indications are the office is selling about 200 tracts each week.

A good selection of land is available in some 15 of the desert regions of Riverside and San Bernardino counties in the vicinity of Twentynine Palms, Joshua Tree, Lucerne Valley, and Old Woman's Springs.

COLORADO

Three lots, 3 miles northwest of Boulder; rough, 100 acres per lot. Value \$1,425 per lot; lodgepole and piñon pine; elevation 6,600 feet.

MONTANA

Public Sales Tracts

Six hundred forty acres, grazing, land, appraised at \$1,000, Garfield County, 28 miles east of Winnett. Moderate to rough breaks. No utilities.

Two tracts: Forty acres appraised at \$800 and 80 acres appraised at \$1,600, Hill County, mile east of Kremlin. Rolling grassland. No utilities.

Five tracts: Seventy-six and fifty-one hundredths acres at \$688.59; 40 acres at \$360; 600 acres at \$3,600; 285.97 acres at \$1,429.85; 40 acres at \$280. Rosebud County, 2 to 12 air miles from Birney, in or adjacent to the Tongue River breaks. Rough and mountainous to rolling bench land. No utilities.

Eighty-acre tract appraised at \$1,075, Fergus County, approximately 20 miles northeast of Denton, 15 acres suited to cultivation of feed crops, remainder has rough terrain and is suited for production of native grasses. No utilities.

Two tracts: Eighty acres at \$1,600 and 40 acres at \$800, McCone County, 25 to 30 miles northwest of Vida, in Missouri River breaks. Terrain too rough and soils too shallow to permit cultivation. No utilities.

Two 40-acre tracts, one in McCone County appraised at \$800, one in Richland County appraised at \$560. Located 12 miles east of Vida with a rolling topography and some rough breaks. No utilities available.

NEVADA

Public Sale Tracts

Forty acres, mostly rough, served by highway, powerline and pipeline right-of-way; 50 miles northeast of Las Vegas. Value \$2,700.

Three hundred and twenty acres, isolated, steep and rocky, no utilities; 11 miles east of Battle Mountain, within 1 mile of U.S. Highway 40. Access. Value \$2,900.

Forty acres, rolling, nonagricultural, no utilities; 5 miles north of Wellington. Value \$860.

Five acres, moderate to steep sloping; zoned for single family residence and lots of not less than acre; 2 miles south of Carson City; utilities adjoining; 1,000 feet off U.S. Highway 395.

Two isolated tracts of 1,280 acres; flat, undulating and rough; no utilities, legal access unknown. Twenty-five miles northeast of Carson City, 1-to-3 miles south of U.S. Highway 50 in Gates Flat. Value \$18,600.

520 acres at entrance of Truckee River Canyon, overlooking Reno and Sparks. Rough, rocky; small corner traversed by Interstate Highway 80, a railroad and related rights-of-way, but topography lends no utility for highway frontage. Only practical access across private land. Minimum approved appraised value \$6,400.

NEW MEXICO

Public Sale Tracts

Three hundred twelve and sixty-six hundredths acres 4 miles northwest of Carrizozo; unsuitable for grazing, cultivation or homesites. Accessible by U.S. Highway No. 380. No utilities. Appraised at \$1,575.

One hundred twenty acre tract, Eddy County, highway frontage, business sites, grazing land. Water, gas, electricity, and telephone.

Two tracts, 40 acres each, moderately rolling high plains, isolated, no utilities within 1 mile, southwestern Torrance County, 10 miles southwest of Mountainair. Value \$280 to \$320.

Forty acres, rough and mountainous grazing land on steep north drop-off portion of the Caprock, 1 mile west of Ragland, Quay County. Value \$6 to \$12 per acre.

Forty acres, grazing land with undulating terrain, red sandy soils; located on south bank of Plaza Largo Creek, 9 miles south of Tucumcari. Value \$15 to \$17 per acre.

Two tracts, 40 acres each, rolling grazing land with red sandy to sandy loam soils; 12 miles northwest of Fort Sumner, near

Alamagordo Reservoir, DeBaca County. Value \$10 to \$12 per acre.

One hundred and sixty acres, desert, rough topography, sandy soils, large mesquite dunes and broad arroyos; 4 miles north of Anthony, south central Dona Ana County; no utilities, although electricity could probably be obtained. Appraised \$9,750.

Seventy-seven and seventy-three hundredth acres, hilly to mountainous, 1½ miles southeast of Bent, Lincoln County. Accessible by primitive road. Vegetation chiefly of native grasses, pinion-juniper trees. No utilities, no improvements. Appraised \$970.

UTAH

Public Sale Tracts

Eighty acres, rolling to hilly, arid grazing land, Carbon County. No improvements. Seven miles south of Price. Appraised at \$400.

Eighty acres juniper-covered foothill grazing land, Millard County partially fenced. No other improvements. Four miles northeast of Fillmore. Appraised at \$500.

Five tracts, rough and mountainous, arid, grazing land, in Salt Lake Meridian, about 24 miles northwest of Kanab. Size range: 80 to 324 acres; value range: \$800 to \$3,250 per tract.

Three tracts, rough and mountainous grazing land, some patches of sagebrush, all within 10 miles of Boulder, Salt Lake Meridian. Poor access. Eighty acres appraised at \$400; 50 acres appraised at \$350; 1,129 acres appraised at \$5,650.

One hundred and twenty acres, rough and mountainous grazing land, covered with juniper and sagebrush; about 10 miles northeast of Kanab. Appraised at \$1,200.

Eighty acres, rough, mountainous, 2 miles south of Stockton; crossed by Union Pacific Railroad, a State highway and powerline right-of-way. Appraised at \$1,000.

Bureau of Land Management Land Offices

ALASKA:

555 Cordova St.
Anchorage, Alaska 99501
516 Second Ave.
Fairbanks, Alaska 99701

ARIZONA:

Federal Bldg., Room 204
Phoenix, Ariz. 85025

CALIFORNIA:

Federal Bldg., Room 4017
Sacramento, Calif. 95814
1414 8th St.
Riverside, Calif. 92502

COLORADO:

14027 Federal Bldg.
Denver, Colo. 80202

IDAHO:

323 Federal Bldg.
Boise, Idaho 83701

MONTANA:

(N. Dak., S. Dak.):
Federal Bldg.
316 N. 26th St.
Billings, Mont. 59101

NEVADA:

Federal Bldg., 300 Booth St.
Reno, Nev. 89505

NEW MEXICO (Okla.):

Federal Bldg.
Santa Fe, N. Mex. 87501

OREGON:

710 NE Holladay
Portland, Oreg. 97232

UTAH:

Third Floor, Federal Bldg.
125 South State St.
P.O. Box 11505
Salt Lake City, Utah 84110

WASHINGTON:

670 Bon Marche Bldg.
Spokane, Wash. 99201

WYOMING (Nehr., Kans.):

2120 Capitol Ave.
Cheyenne, Wyo. 82001

ALL OTHER STATES:

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