SOCIETY FOR THE CONSERVATION OF BIGHORN SHEEP

The Sheepherder

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MINERAL DEFICIENCIES IN DESERT BIGHON AND DOMESTIC LIVESTOCK -- In San Juan County, Utah. -- Carl Mahon, Bureau of Land Management, Blanding, Utah.

During the first desert bighorn sheep study conducted in southwestern Utah a mineral deficiency in hte diet of the sheep was indicated. The first investigations were observations of bighorn eating foreign materials and a high incidence of clay found in fecal droppings. Followup data gathered from interviewing livestock operators and reviewing research papers on the subject indicate that mineral deficiencies possibly do exist on many desert ranges, particularly phosphorous deficiencies. Phosphorous deficiencies can result in low vigor and lamb loss in domestic sheep lambs. Future experiments on the desert bighorn range in southern Utah will be initiated to see what calcium-Phosphate supplement the bighorn will select and data will be gathered in the furure to try and determine the effect on lamb survival should the bighorns select to use any of the proposed calcium-phosphate diet supplements. There is little of no available information on this subject with respect to desert bighorn presently, and it is believed by the author (Carl Mahon) that more research data on the subject from other desert bighorn ranges in the southwest is sorely needed. We have lost much of the suitable bighorn sheep range to urban develoopement and large reclamation dams with their recreational areas. Sometimes water from these lakes is used to irrigate land formerly used by bighorns. Mines have also taken much of the area and some of the miners have also been poachers. Other people use springs formerly used by bighorns. When people move in, the sheep move out. Arguments do exist concerning mineral deficiencies do exist on bighorn ranges--If so, then why are there any bighorns remaining on these ranges? Historic ranges, and numbers or migration routes of these sheep are not known nor whether mineral deficiencies then existed or whether or not they had any effect on their movements. Parts of the study area are known go be deficient in calcium, phosphorous and iodine. Evidenced by both bighorns and domestic cattle having abnormal appetites..livestock operators feed supplements to overcome the deficiencies. No supplements are given to the bighorns. Mineral deficiencies cause animals to eat things completely foreign to their normal diets. Mahon states that he has seen cattle pick up bones and carry them along as they were being driven. The cattlemen then put out self feeders and fed steamed bone meal. A herd of about 300 cattle ate an average of 7½ pounds of this steamed bone meal, after about threee months the cows quit using this supplement. In the spring of 1966, Mahon and Lanny Wilson found a deer antler on which sheep had been eating on and had fought over. In 1968

Newspaper Rock -Indian Creek State Park, south of Moab Utah, some 40 odd miles. Anthropologists have not unravelled the meanings of the pictographs but think they may be a form of hunting magic. Three periods of time are believed to be represented. covering 1500 years. The earliest are credited to the Fremont horticultural peoples, or basketmakers, who were here about 900 to 1500 A.D. The most recent, showing mounted men, are probably less than 200 years old and could be the work of Ute tribesmen. In the Navajo language this rock would be called TSE HA NI, meaning "rock that tells a story"--but a story that likely will never be known.

Wilson observed a mature ewe chewing on a large deer antler throughout a day, and when she left the area she carried the antler with her. Mineral deficiencies will also cause sheep to eat petroleum products and these are poisonous to them and cause some deaths; the eating of clay and rocks is another indication of this mineral lacking in their diet. Rams will butt rocks, causing flaking of the rock and they will then eat these flakes.....Local domestic sheep raisers did not observe any abnormal appetites among the domestic sheep---but then these sheep were fed supplementary food during the winters.. Mahon put out sodium chloride salt along main trails and found it used not at all....He states," Next I decided to set out alfalfa hay to get the bighorns used to coming to certain areas so we could introduce other minerals. After I put out the hay I was informed that desert bighorns sheep wouldn't eat hay. The sheep, being ignorant of this well known fact as I was, ate every stem down to within an inch. Alfalfa hay is 1.04 % calcium and .21 % phosphorous....Larry Farnsworth, of the Utah Fish and Game and I placed steamed bone meal in a split tire along with hay on Found Mesa. Coming back a week later we found two ewes and two lambs had eaten the bale of hay and approximately a pound of bone meal a piece. In Piute Canyon, hay and bone meal were put out. The sheep in this area were well educated and ate very little of the hay, but ate between four and five pounds of the bone meal.."..... When domestic sheep, especially lambs, eat clay it compacts the digestive tract and kills them. A Cedar City rancher, Elved Williams, told Mahon of losing 15 to 18 % of his lambs from eating clay. By using one part of di-calcium phosphate and one part salt he cut the mortallity loss..."Before feeding the di-calcium phosphate he was selling his lambs of which 40 sold as fat lambs and 60 % as feeders. After using the di-calcium phosphate his lambs averaged seven punds heavier and 90 % were sold as fat lambs. He increased his lamb survival by 20 per cent!! Prolonged phosphorous deficiency causes animals to become lame and stiff in the joints. With bighorn sheep, this could make them much easier prey for predators. Studies show that cattle fed phosphorous supplement on deficient ranges gain as much as 200 pounds more by maturity and calves are from 50 to 75 pounds heavier at weaning time.....Such mineral deficiencies can also cause weakened bone structure, and this is something that the bighorns don't need . In their rough habitat they must have strong bones to survive. Low lamb survival on many bighorn ranges could possibly be caused by lack of sufficient minerals in thier diet....At Texas A & M College it was found with cattle that as many as 30 % will not conceive and up to 5 % will abort if phosphorous or calcium is lacking in the diet. In an enclosure in Texas, five desert bighorn sheep utilized two-30 pound blocks of Moorman mintrate salt in six weeks. Moorman mintrate salt contains 42 % protein, all the known essential minerals, Vitamin A, Terramycin, and 14% salt. Since the salt was placed in the enclosure(1962 lamb mortallity has ceased and reproduction has been high).....These conclusions are born out by other reports among the wild sheep along the Green River, in antelope and other sheep of Utah and in Texas. It seems that during periods of drought that the vegetation is low in phosphorous content and this has been found to affect milk production in domestic cattle and may well have a significant effect of the milk production of the ewe as she is nursing her lamb, and consequently on the possibility of survival of her lamb. ...Light rains on the desert seem to leach salts and minerals from the soils. These minerals may then be washed away by subsequent hard rains and lost from the area.

Mahon concludes:," I believe that more detailed mineral deficiency studies are necessary on all desert bighorn ranges and the responsibility given to researchers who have more time and sophisticated methods of analyzing results."

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FOR WANT OF A WILD HORSE....

by Bill Reavley

Bureau of Land Management photos

A band of wild horses on northern California rangeland. Horse populations are increasing 17-25 percent a year.

This article is from the National Wildlife Federation's Conservation News of May 1, 1974. Bill Reavly is the Western Regional Executive Director of the NWF. Reavly states: "The wild horse in America has a romantic history that dates back nearly four centuries.....The free-roaming horses and burros of the western plains are not indigenous to America, but instead evolved to their present state from domestic ancestors. Frequent interbreeding continues to influence the genetic traits of the now-feral animals. But little of the original Spanish mustang blood now courses through their veins.....-Although the BLM and the Forest Service have been hard pressed for personnel and funds to collect data needed for wild horse and burro management, some facts are beginning to be accumulated .. Undoubtedly, pressure for immediate management of wild horses and burros will increase throughout the west. Both organized and spontaneous efforts by livestock groups, wildlife interests, range land managers, ecologists, watershed interests, and others will accelerate in relationships to how swiftly Uncle Sam gets into a serious management effort.....Under ideal conditions, wild horses and burros can double in population every four years, according to the Caliofrnia State Advisory Board.....One

of the greatest public obstacles to a solid management program has been the number of tragic incidents of human cruelty to wild horses, including a well-publicized one which occurred last year in Idaho.....However , out West a nervousrestless breeze is beginning to stir . It is seen in resolutions now being passed by district and state advisory boards, part of the BLM system.....The W ild Horse and Burro Act requires the Secretaries of Interior and Agriculture to present a progress report to Congress regarding the implementation of the Act by June 30, 1974.....If our wild horses are to survive in today's West, then the issue of proper range management must be resolved so that wildlife, domestic livestock, people and wild horses can all live in harmony in a humane manner.." END QUOTES.
NOTE: Dr. Lutz, President of the Society; Dick Weaver of the DFG; your editor and many others have been involved in this controversy for the past many years----Is there finally going to be a glimmer of light at the end of the long dark tunnel? I hope so.

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BAINTER SPRING PROJECT

During the first week of May "Pete" Petron and Lew Carpenter, two retirees from Fresno, drove into the Argus Mts. north of Trona. From their base camp at the head of the wash, and at about an elevation of 2500ft. it was a 25 minute hike to Bainter Spring. This spring like others in the Great Falls Basin, across the ridge, had many years before been tapped as a water supply source for the Trona area. This source was inadequate and very difficult to maintain, winter temperatures being well below freezing, and was abondoned after some years when a new and better source of water was obtained from the west. Willows and baccarus were usurping nearly all of the water produced in the spring area. John Massie, Habitat Supervisor for the DFG had airlifted 3 sacks of cement and some 50 lineal feet of 2" X 6" redwood lumber to the site---someone stole the parachute used for this purpose. Sand had to be carried in buckets from a ravine about 100 yards distant. Pete and Lew worked for three days on the project using axe, pick and shovels, cutting out the vegetation , excavating the site and in the building of the water catchment basin and its drinker. The picture at the right is of the Bainter Spring project. The banks of the drinking basin are a solid mass of roots. Many birds including doves and humming birds were seen in the area. There are also quail and chukar in the area. The only mammals seen were antelope ground squirrels and one coyote, early one morning. No sheep sign was found in the area. Judging from the sign, there must be many, many burros in the area. None were seen

FRESNO AUDUBON SOCIETY

We have noted in previous issues of THE SHEEPHERDER that the Fresno Audubon Society has taken positions of helpfullnes for the bighorn sheep and have contributed funds to the ram replacement project. In the May, 1974 issue of the YELLOW BILL, Society President Eugene Zumwalt states, " .....Another report is that the national officers don't seem much interested at this time in the burro problem in the deserts. Partly they are skeptical about current figures coming out of Fish and Game, Partly they are ignorant of the problems really involved, but most importantly they point out that letters are three or four to one in favor of the wild horses and burros against the survival of the mountain sheep. Thus, they are reluctant for political reasons to provide much leadership. If anything is to be done -- and we must decide carefully what must be done and how -- then it will have to be started by the local chapters who can hopefully ultimately provide the information to the national officers to get this action. In this regard Dave Selleck reports that he is trying to arrange a trip into the desert for Paul Howard(State President) so that he can see the problem first-hand."
NOTE BY EDITOR--- the above points up the importance that every member of the Society for the Conservation of Bighorn Sheep needs to be an ambassador among and to other conservation clubs and associations or societies. Inform your friends and acquaintances of the many problems concerning the bighorns. Also write letters to agencies and to your elected officials , especially in your State and National Capitols informing them of problems and what needs to be done to help correct existing problems. Many of our Legislators and Congressmen must rely on the laymen for information and opinions, and they will often listen to you. Let all members be willing to tell what the Society members are doing to help solve the problems of the bighorns and the other wildlife species which inhabit the same areas. PLEASE SEND WRITTEN REPORTS AND PICTURE OF PROJECTS THAT YOU WORK ON TO ME, YOUR EDITOR, SO THAT I MAY TELL ALL THE SOCIETY'S MEMBERS WHAT WE ARE DOING. I know that this will sound like bragging. However, I really believe that we must be willing to do some bragging. We simply must inform the non-informed public of what is needed to be done and that there are a few who are really trying to do something about it.

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DESERT BIGHORN

DESERT BIGHORN COUNCIL

The Desert Bighorn Council met at Moab, Utah, April 9through 12, 1974. In spite of the gasolene shortages throughout the Western States the conference was very well attended. There were 78 members present. There were a number of students fromnearby colleges. There was an excellent representation from the Utah Department of Wildlife Resources and a number of interested townspeople. In all there were about 125 people present. Carl Mahon, the Council Chairman called the meeting to order and introduced Bill MacDougal the Mayor of Moab, who welcomed the participants to Moab.
John E. Phelps, Director, Utah Division of Wildlife REsources also welcomed those present and spoke briefly of the beginnings of research by his Division into the desert bighorn sheep in 1964. Utah is now spending considerable money on water developments for desert wildlife and especially for the sheep. Utah now has a transplanting program underway. Beginning in 1965 Utah has had a limited hunting season and a very limited number of permits issued to residents of the state only. During the next seven years 24 rams were taken by hunters. There has been no open season or legal harvest during 1972 or 1973. The Division of Wildlife REsources is now building up an extensive library on the desert bighorn sheep.

PAUL Howard, Utah Director, Bureau of Land Management, was introduced by Mahon. Mr. Howard spoke of some of the effects the leasing of oil shale deposits and the subsequent mining of these deposits would have on wildlife.....80% to 90% of the bighorn sheep range is on Bureau of Land Management lands.....The emphasis on energy crisis is creating problems with other resourcesand with wildlife. The area used by the bighorn sheep fortunately is not in the area of the oil shale deposits, nor on areas of power plant siting.....Historically the desert bighorn sheep range has no history of domestic sheep grazing. There has been some grazing of cattle on these rangesand is at present.....Other competition of resource use: Oil and gas where located to the present will create conflict with wildlife; Historical sites have been closed to oil and gas exploration and licensing.....The Bureau is getting heavy opposition from the oil and gas companies for entrance to restricted areas.....BLM plans to delay any leasing until studies have been made whereby these resource values can be protected.....15 water sites on BLM lands have been developed by the BLM for the desert bighorn sheep.... Planning and development of BLM lands also consider other rare and/or endangered wildlife species.....Habitats of wildlife are being studied. One of these known to be rare and which may also be endangered ,or which may actually be extinct is the blackfooted ferret. This specie was known to be very rare even some 50 to 75 years ago .

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Lanny Wilson Council Secretary-Treasurer read a tribute to Charles "Chuck" Hansen. Chuck was one of the four men killed in a plane crash in Canyonlands National Park almost a year ago. Chuck's parents were present at the Council meeting as were his wife Pat and their son Mike and daughter Debbie.

Dr. Juan Spillett read a tribute for John Ebersole, whose widow was present.

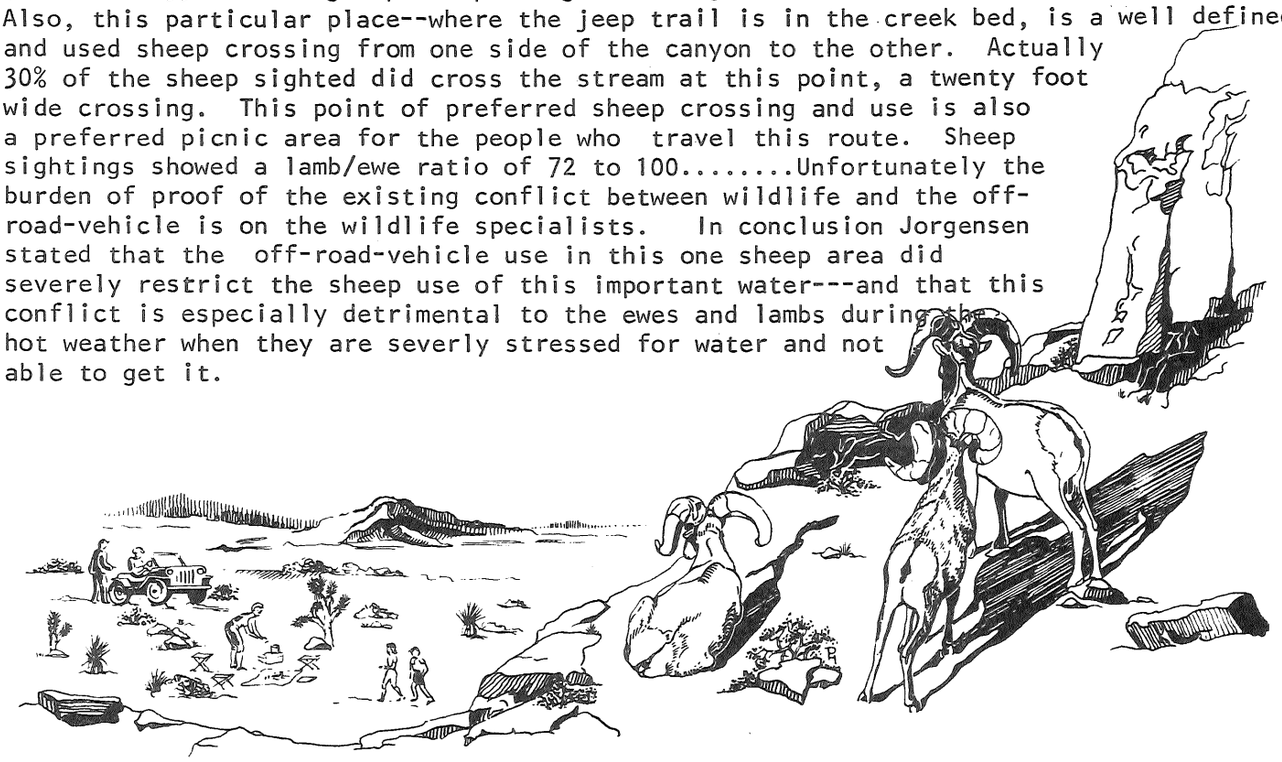
Tom Hartman read a tribute for William W. Cooper and Carl Mahon eulogized Dick Smith the pilot of the illfated airplane.

The tragedy involving Hansen, Ebersole, Cooper and Smith was the lead article of the May-June issue of THE SHEEPHERDER.

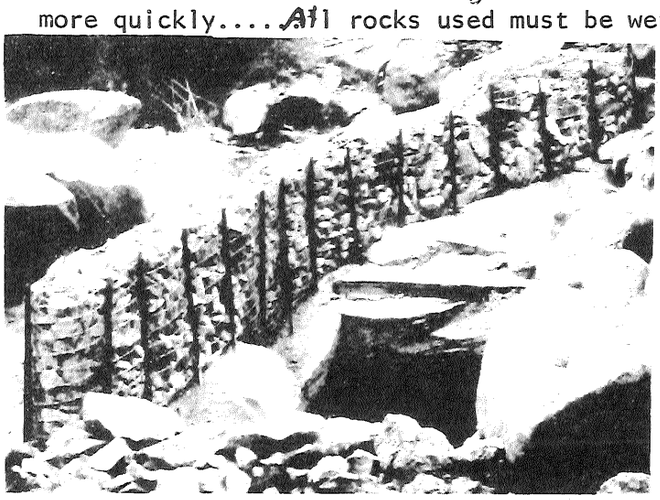
Peggy Merritt a graduate student of the University of California- Riverside, read a paper "Factors affecting Habitat Utilization by Bighorn Sheep in the Santa Rosa Mountains of California". Peggy is continuing the studies begun by Jack Turner a few years ago at the Desert Research Station at Deep Canyon. Part of her study involved the use of bedding sites both on a limited range and also on an unlimited range. She found, as might be expected that sheep on a limited range used a fewer number of beds more frequently and for longer duration than did sheep on a larger range. Here the bedding sites used were greater in number and these beds were used a smaller length of time each. a larger number of bedding sites were found in the vicinity of grazing areas. The proximity of water was also found to be a significant factor in both bedding and grazing. About 60% of the bedding sites were found to be on north facing slopes of about 40 percent.....The Palm Springs Chamber of Commerce has recommended that the Santa Rosa Mountains be made an ecological preserve...

Mark C. Jorgensen presented an illustrated paper entitled, "Use of Water Holes by Desert Bighorns in the Anza Borrego State Park in California.".....His area of study is right on and along Coyote Creek and on the boundary line between San Diego and Riverside Counties--known as the Willow S pring area.....Jorgensen reported that there are between 75 and 100 sheep using this area.....A jeep road runs along the creeek and at times is in the bed of the stream. THIS IS A VITAL WATER SUPPLY FOR THE SHEEP. Jorgensen made a behavioral study of the sheep when vehicles were in the area...During the 12 day study period there were vehicles in the area 6 days...this occurred in the most part

during the weekends and during this period of vehicular usage the sheep sightings were greatly less than the average..Statistically- there were sheep sightings only 55% as great during this period as when there were no vehicles in the area. During these days there were 35 vehicle groups-- spending an average of 20 minutes at this watering site.. Also, this particular place--where the jeep trail is in the creek bed, is a well defined and used sheep crossing from one side of the canyon to the other. Actually 30% of the sheep sighted did cross the stream at this point, a twenty foot wide crossing. This point of preferred sheep crossing and use is also a preferred picnic area for the people who travel this route. Sheep sightings showed a lamb/ewe ratio of 72 to 100.....Unfortunately the burden of proof of the existing conflict between wildlife and the off-road-vehicle is on the wildlife specialists. In conclusion Jorgensen stated that the off-road-vehicle use in this one sheep area did severely restrict the sheep use of this important water---and that this conflict is especially detrimental to the ewes and lambs during the hot weather when they are severly stressed for water and not able to get it.



LASTING WATER FOR BIGHORNS ---a paper presented by Bob Gray, President of the Arizona Desert Bighorn Sheep Society. Gray illustrated his talk with slides which s howed the step-by-step process in the properly bonding of concrete diversions to bed-rock, and its importance . He gave a list of materials necessary to do an adequate job and the tools needed in the process.....waterproofing of the concrete is necessary. Common cement and hydrated lime are used..- sand is screened....they use Acro-60 and Thoroseal...color is added to the final coating in an effort to make the project when completed less conspicuous.... In the site preparation house brooms and even whisk brooms are used to remove sand and dust which would interfere with a perfect bond of concrete and Acro-60 with the native rock.....all cracks and voids are carefully filled. Rebars are set in holes drilled in the rock and Calcium Aluminite is mixed with the cement to firmly anchor the rebars in place...This Calcium Aluminite sets up very quickly and the higher the temperature the quicker it sets-up. The Acro-60 is painted on the bedrock and beyond the site of the base for an extra 6"... When mortar is completely mixedthen Calcium Aluminite is added and mixed in will cause the concrete to set-up more quickly....All rocks used must be wet when put in place in order that the concrete does not dry too quickly. As soon as the mortar tightens up it should be brushed with the Acro-60 and the Thoro-Seal used as soon as the free water leaves the surface of the cement .....Gabion type diversions are used to help in diversion of silt from impoundment site....These Gabion diversions are formed by use of wire screen filled with rock and in the form of a wall using steel fence posts to hold it in place. The picture at the left shows one of these type diversions....Later in the session the Arizona Desert Bighorn Society was presented the Desert Bighorn Council Conservation Award for thier efforts in behalf of the desert bighorn sheep



The final product. photo by Doug Reynolds.

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Kelly Neal of Arizona spoke to the topic,"Arizona Bighorns 1973 - Outlook for 2050.

There are two major problems which face the desert bighorn sheep of Arizona . These are (a) Political and (b) Technological.
The political situation is caused by the industrial and real estate developements. The State of Arizona has a Model Community Development Act. By this act a land owner of 4,000 or more acres can develop a taxing district and then obtain Federal funding for development of the property. There are at present at least 12 of these projects now being planned and nearly all of them are along the Colorado River and are in bighorn sheep habitat.
(b) There are new nuclear plants, dams on the river(s) being planned, transmission lines for power --and these are also all or very nearly all in prime bighorn sheep habitat. These are also going to create massive immigration into Arizona and into this habitat . Groups of planners are working together and they claim that they will

solve all conflicts between people and wildlife especially the wild sheep.....In order to do this the planners plan to relegate the bighorns to "SHEEP PARKS" ...Then the question arises. "Will multiple use then also provide multiple and other uses within these SHEEP PARKS ?
Neal noted that on some of the gunnery ranges in Arizona that the bighorn sheep are doing very well---and then of course if gunnery ranges are beneficial to sheep WOULD ACTUAL WARFARE BE BETTER?

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George Constantino of the Desert National Wildlife Range, Northwest of Las Vegas some 30 miles briefly reviewed the essentials of the procedures necessary in time-lapse photography. George has given papers previously on this topic. The essentials are:

1. Equipment used must be good and it must be kept in perfect condition
2. The location of the camera is very important. It should be placed so that it faces to the north. It must be housed and it must be covered to reduce heat and keep out dust and should there be rain to give protection from moisture;
3. The focus is important--- usually best to set it on infinity and then stop the lens down in order to give as great a depth of field as possible;
4. Camera used should have self-adjusting light arrangement---this is of course hard on battery life;
5. Film used is MFX with ASA rating of 100---purchased in 100 ft. rolls;
6. Camera should have a fairly large field of view;
7. Batteries used have been pen-lite but as noted above their life has been short. (another Council participant stated that they used 6v. lantern batteries to operate both the camera motor and also the shutter)
8. An Intervelometer is used. --- this is a timing device which exposes frame or frames of film at pre-determined intervals.

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Jack Cooper, Nevada Department of Fish and Game, Las Vegas, reported on Nevada Bighorn Sheep 1973 and plans for 1974.....Desert sheep habitat in Nevada is basically south of an east-west line through the southern end of Lake Tahoe.....The present requirements for a legal ram in Nevada is either an age of seven years or a minimum of 144 Boone and Crocket points- scored by taking the horn scoring the greatest and doubling that score.... In the last two or three years the age of the rams harvested by hunters has increased slightly. Even so, probably it will not be possible to eliminate the killing altogether of underage rams. Only two rams are known of being either old enough or large enough to meet these requirements during 1973.....Helicopters are used to census the sheep yearly, prior to the setting of season and harvest quotas. Helicopters are also used in search of water sources and sometimes for the transportation of materials to project sites- provided this material can not be transported either by horse. mule. truck or tram.....Experience has shown that if the upstream side of a dam is sloped at about 45degrees that the catchment will be self cleaning.....Some water catchments are built using inter-locking metal panels. From these roof like stuctures the water is transferred into tanks for storage and then meterred for use. The Department has had a problem with predation by mountain lions at the Hawthorne enclosure. The fence around this enclosure is 8 feet high and has a 45 degree outrider carrying 2 strands of barbed wire; in addition there are electrified wires surrounding the enclosure. However a pride of lions did gain entrance and did kill three of the sheep in the enclosure. Whereupon the Department decided to free all the sheep in the enclosure into the wild. However F & G personnel were unable to drive all of the sheep out of the enclosure, four remained.(NOTE) readers of THE SHEEPHERDER will perhaps recall that the Hawthorne Project was reported on about June-July? 1973 and at that time it was noted that the F&G personnel considered the Hawthorne enclosure really too far North for best results with o.c. nelsoni and that future plans at that time was to free the desert sheep and to try again with o.c. californiana. The lion problem has been the clincher and the plan will be implemented. Still unresolved is the problem of how can large predators such as the mountain lion be kept out of an enclosure?.... Ten sheep have been trapped in the Boulder Beach area of Lake Mead and have been taken to the Zion National Park as a beginning in a restoration program . This restoration of bighorns to the Zion National Park was a pet project of Robert D. "Jake" Metherell. Jake began discussing the proposal with various authorities within the Utah Division ofWildlife Resources. Nevada Fish and Game Department. National Park Service . Bureau of Land Management and local interest several years ago. A location was found in 1970 near the North Fork of the Virgin River and the 120 acre enclosure was built. Survival of this restocking has been good and 2 lambs were born in December of 1973. Unfortunately Jake was killed in February or March of 1973 in an airplane accident in Nevada's Ruby Mountains.....The Desert Bighorn Society dedicated the 1973 TRANSACTIONS to Jake. But- back to the report of Jack Cooper.... In the eastern part of Nevada's sheep range mule deer are also found and seen on occassions, as is a white ewe--thought to be an albino.

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Carl Mahon showed a motion picture, "The Desert Bighorn Sheep in Utah". Carl and Juan Spillette had worked with a T-V station in Utah for a year and a half to produce the film. This 27 minute documentary is very well done as it should be having Carl and Juan as consultants. Information concerning loan or purchase of the film can be obtained from KED Educational T-V, Salt Lake City. Copies may be purchased for $160.

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NOTE: Your Editor received the following letter from John Massie, our Wildlife Habitat Supervisor of the DFG. The letter tells so much, I'll print it intact.

Dear Lew:

We have had some successful programs in the past few days that will affect the bighorn of southern Inyo County. I thought you might like to hear of them.

Twenty-eight volunteers from the Pasadena Telco Rod and Gun Club, working as a part of the Volunteer Desert Water and Wildlife Survey, completed the scheduled work at Dry Mountain in a record time of under five hours on the 6th of April.

A concrete wash dam, 200 feet of two inch galvanized pipe and three 1,500 gallon tanks (purchased by the Safari Club donations) were installed by these strapping young men under the leadership of Mike Bird and Les Coombes of the Department of Fish and Game.

Unfortunately, it was not possible to get the B-1 helicopter from National Helicopter Engineering onto the best location on the mountainside during the lift operation on the 4th of the month.

The very narrow canyon and tricky cross-winds made it simply too dangerous. Since we could not postpone the lift until better weather arrived, I decided to move the site three canyons to the north where a less suitable, but still adequate site could be landed on. This location required 180 feet of pipe more than was on hand and a subsequent lift is planned to make this unit function as Inyo County Big Game Guzzler Number Two.

The previous day, I rode with the helicopter pilot to 14 springs in the Slate, Argus, and Panamint ranges where cement and redwood was delivered for the development work. Manpower is needed now to complete the work on each of these sites. If you have anyone willing to spend a working weekend with a Fish and Gamer in the desert, you should direct them to write or call me or Earl Lauppe here in Long Beach for coordination. Maps, dates and assistance can be provided to groups as small as two or as large as you have.

Granite Mt.

The next major Big Game Development is scheduled for the 18th of May in eastern Riverside County. The Society, of course, has been instrumental in obtaining fine monies in this County to do this work. The authorization has been obtained from the State Lands Commission and on-the-ground surveys have been completed. Manpower is badly needed on this site. To date, we have none committed from the Volunteers, excepting Glenn Sudmeier, whom I am sure will be there.

Again, coordination, as to dates, locations and remote travel assistance should be obtained in this office.

That seems to be all that is brewing now. I hope you can use some of this in the Sheepherder and maybe we will see you in the Granites on the 18th.

Sincerely,

NOTE: I had conflicts I couldn't avoid and did not get to the Granite Mts. Lew.

John Massie

SEQUEL TO THE LETTER: A few evenings ago I had a long chat with John Massie. The Dry Mountain project is in the Saline Valley about 100 miles to the north of Trona. There are a great many burros in Saline Valley. However the project site--the spring is located in an area too rough to be traversed by the burros and is an altitude much higher than is habited by them. So, there will be no conflict betweem them for the water.
Other projects completed:
Goat Spring in the Ord Mountains. A group of students from the Azalea School and from the Oakwood School furnished the manpower and developed water for wildlife from an old abandoned mine tunnel. They built a small dam inside the tunnel and then piped the water to the outside where they built a catchment basin . This was a project similar to the one completed 2 years ago in the Gemco Mine tunnel in the Old Woman Mountains.
Weaver-Noy Spring - in the Granite Mountains.
This was the project of May 18 and 19th, 1974. John reported that there were 6 men from the Department of Fish and Game and 75 other volunteers on the project. Within this last group there were 11 ladies, and John reported that they worked like troopers; there were 26 students from Pierce College, near Pomona; 25 Senior Scouts also were on the project. Ten different organizations were represented, one of which was the Sierra Club which had 5 representatives, one of whom, Frank Baron is their taskmaster for their Committee on Wildlife and Endangered Species . Baron is also the editor of their chapter newsletter. (I wish that I had his address--I know that there are Sierra Club members on my mailing list.) Bud Weidemanof the Society, as usual, led the volunteers in their work on the project. Without the muscle provided by the Scouts and the young men of the Pierce College, the job could not have been completed. Reason: The helicopter set the

cement mixer down in the ravine at a distance of about 150 yards from the project site. From here it had to be manhandled over a mass of boulders some of which were higher than a tall man. With all this manpower the job was nearly completed on Saturday. On Sunday John and his men together with 13 of the volunteers, who had stayed over, the job was finished. All excess materials and spoils have been removed from the project site by helicopter. It is now operable.....John saw a ewe in the area on April 9th.

On Monday John took the Chairman of the Riverside County Fish and Game Commission for a survey of the area around the Granite Mountains. This spring,named Weaver-Noy is the only know water in the Granite Mts. During their survey by chopper they noted some evidences of sheep trails and saw some tenajas to the west of the project

A letter from Valerius Geist, Ph.D., Program Director, Environmental Sciences, The University of Calgary, states in part," With respect to the illegal shooting of rams that Mr. Robert Savage was referring to, I would have the following suggestions. If adult rams with good horn developments are bought, I suggest that you brand numbers onto these horns in several localities so that they are rather conspicuous, as well as cutting off the tips as suggested by Robert Savage.

If you have a chance of getting lambs for reintroduction purposes, then I would suggest the following. Shortly after birth, do the proper dehorning techniques on the young males and rear them quite normally. I predict that they will grow to a very large body size, and that they will be excellent specimens for a founder population of bighorn transplants. They would not be recognizable as rams for the duration of their lifetime and would thus be safe from illegal hunting." End quote.

LAVA BEDS CALIFORNIA BIGHORNS--WAS 1973 TYPICAL? ---Jim Blaisdell, National Park Service, Klamath Lake, Oregon. If 1973 was a typical year for bighorns on the Lava Beds then Jim wants no more typical years.....The Lava Beds re-introduction had its beginnings with the Leopold Commission in 1963.....It is believed that the loss of the bighorns from the Lava Beds many years ago was directly caused by the Scabies Mite carried into the area by grazing domestic sheep. .. To briefly review-- In 1971 the 1100 acre enclosure was ready to receive its first sheep. These 8 ewes and 2 rams were obtained from British Columbia and transported by truck to the site in the fall of 1971--October. In the spring of 1972 4 lambs were born two of which disappeared. In May of 1973 all 8 adult ewes each had a lamb--All lambs born between May 5 and 13th. July 8th one ewe could not be found without a search--when found, she was found to have an apparantly injured rear leg. She subsequently died--a postmortum showed no wound. It is presumed that she had a fall in the rocks (sheep do have falls and are sometimes killed by these falls)..Her lamb was adopted by another ewe. One lamb disappeared between September 4 and 7. Of the 1973 lamb crop only one is known to be a ram. One lamb was injured but recovered.....On October 20th the 3½ year old ram was shot and killed, by a poacher who attempted to cut off the head with what appeared to be a pocket knife, but was unsuccessful. The 7 year old ram apparantly was also shot at the same time but escaped, only to linger and then die about November 20 when the carcass was found---postmortum did not determine the cause of death . Various organizations and individuals posted $4,000. reward money for evidence which would lead to arrest and con=-viction for the killing of these sheep---Most of the reward money was posted by Sport-smen's Clubs. The culprit is believed to be known, but there is still not enoug h evid-ence to prosecute with any hope of conviction.....It is also believed that the poaching was not for a trophy to put on someone's wall.....At this time(November) there was still one yearling ram in the enclosure....The ewes are believed to have been bred on time, perhaps prior to the shooting or if not then by the yearling ram.....December 8 a ram was caught on the Hart-Sheldon Wildlife Range in Nevada and turned loose in the enclosure. Observations indicated that the ram after his freedom stayed away from the other sheep until about December 19th.....Jim has observed one ewe babysitting all 7 lambs on occassions while the other ewes were feeding or going for water.....Jim does not believe the poaching is apt to occur again....He is not in favor of sawing-off the tips of the horns as was suggested by Mr. Savage from Montana.....Jim would prefer to take the chances of no further human depredation.

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As of May 11th -- Five lambs have been born to the Lava Beds flock this spring --the flock now totalling 22 sheep. Biologists have high hopes that the two mature ewes and a 2 -year old ewe might give birth befor the lambing season is over.

As of May 18th--Two lambs have been born at the Deep Canyon Research Facility in the rugged Santa Rosa Mrs. of riverside County.. Last year Jellybean gave birth to a lamb at the time named Gumdrop. However, for some, as yet, unstated reason the name of this (now a yearling) lamb, has been changed to Knockers.

THINGS TO DO --DATES TO PUT ON YOUR CALENDAR:
HAVE YOU MADE YOUR PLANS FOR YOUR WATERHOLE COUNT? THIS IS A VERY IMPORTANT RESEARCH.
TENTATIVE WATER PROJECT DATES:
August 10th and 11bh --In the Piute Mts. of Eastern San Bernardino County north of Needles
October 5th and 6th in the Chuckawalla Mts. of Riverside County.
The Annual Southern California Dinner meeting of the Society will be held October 19th at the TAIL O' THE COCK restaurant, 477 South La Cienega Blvd. Los Angeles, California.

Dr. Lutz Wishes to remind Society members that Propositon I on the ballot June 4th does have funding built into it for purchase of sheep habitat---this habitat to be managed by the Department of Fish and Game for wildlife.