SOCIETY FOR THE CONSERVATION OF BIGHORN SHEEP

The Sheepherder

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Dedicated to study and promote the conservation, propagation and preservation of the wild sheep of North America.

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OLD DAD MOUNTAIN'S BIGHORN SHEEP UPDATE 1981

Mr. Vernon C. Bleich, Associate Wildlife Biologist, California Department of Fish and Game has made a report concerning the status and his recommendations for the Bighorns of the Old Dad Mountains.

The Old Dad Mountains are in northeastern San Bernardino County. They are primarily of limestone origin. They rise abruptly from an elevation of about 1800 feet to some 4,250 feet above sea level. Like so many of the desert mountains of California they are not of large area and occupy a total area of only about 40 square miles of which only about 35 square miles are suitable sheep habitat and of which only about 25 square miles are occupied by bighorn sheep. In 1969 Dick Weaver and Jerry L. Mensch in their report to the Legislature reported that there were an estimated 25 bighorns in the Old Dad Mountains. Directly to the east the Kelso Mountains have a small resident population whose numbers are undetermined.

As a result of Weaver's report an artificial water catchment was installed in 1975 in the old Dad Mountains. This facility has a capacity of 4500 gallons and is used extensively by bighorns. Time-lapse photography has documented this use as have visual observation by several of DFG's personnel.

Although Crossley and Moody reported 73 sightings of sheep from February through September 1979 the greater significance was the report of sighting 33 ewes, 14 lambs and six rams on the 18th of March 1979 . Dake and Curry observed a minimum of 31 individuals on May 30, 1980. Also Les Coombs reported that he had seen 43 individuals on 12 August 1980.

From these reports it seems evident that the numbers of bighorns occupying the Old Dad Mountains have dramatically increased during the past several years and that a large population now exists in this area. On May 7, 1981 DFG employees Bob Vernoy, Les Coombs and Andy Pauli expended 2½ hours of helicopter time counting mountain sheeep on the Old Dad Mt. They observed a total of 48 individuals, again suggesting a substantial increase in the number of sheep inhabiting this area.

From these observations it has been concluded that there may well be a population of 100 animals on the Old Dad Mou ntains. As was reported in the May-June issue of T.S. the biologists of the DFG were also looking for places where other water catchments could and should be built. One of these in the SW¼ of Section 12, T12N and Range 10East at an elevation of about 2600 ft. appeared promising, and was selected for the construction of a big game guzzler in order to supplement the unit installed in 1975. On 21 November 1981 a 5,100 gallon water catchment was installed at this site.

At the April 1982 date of this report, rainfall sufficient to fill the new unit with water had not occurred. Presumably, this also is the case for the unit installed in 1975, which was nearly dry on 19 Novemeber 1981, because of inadequate rainfall to supply water at the rate the existing sheep population is utilizing the water.

"The rationale for the construction of the new catchment primarily centered around dispersing the sheep more evenly on Old Dad Mountain and was desirable for several reasons: (1) the amount of water that can be stored in the original catchment is finite, and is further limited by the amount of rainfall which occurs in the area, (2) sheep are concentrated around theoriginal unit in large numbers, and the potential for the population damaging the range near the original catchment exists, (3) sheep are concentrated so densely during the summer period that an epizootic can potentially decimate the population and (4) only one other water source, a series of natural rock tanks, located near the original catchemnt, exists on the mountain; if rainfall insufficient to fill the catchment does not occur, the tenajas also will remain dry.

Irregardless of whether or not rainfall sufficient to fill the catchment occurs, the sheep population on Old Dad Mountain very likely will be limited by the amount of available water. At present, the population of about 100 animals represents a substantial increase over the number estimated to exist there in 1969. Clearly this population has responded to the addition of permanent water in the area, and has expanded to the point that the amount of available water has again become a limiting factor.

To avert a major die-off as a result of over-concentration near water sources or from lack of water itself, it is recommended that a portion of this population be removed from Old Dad Mountain. Currently, the only legal way to accomplish this is to use this population as a source for transplanting, and several potential sites at which to release sheep from Old Dad Mountain now exist. If an effort isn't made to reduce the current population, it is probable that the efforts expended thus far in improving habitat on Old Dad Mountain, and which have resulted in a substantial increase of that sheep population, will be negated by the loss of a large portion of that population." end quote.

ARIZONA SHEEP SOCIETY APPROVES FINANCIAL SUPPORT

Up to $25,700 in financial support for the Department's proposed transplant of desert bighorn sheep to Redfield Canyon in the Galiuro Mountais of Arizona has been approved by the Board of Directors of the Arizona Desert Bighorn Sheep Society.

In a letter July 13 to Department Deputy Director Roger Gruenewald, Society President Tom Boggess said the funds would be made available on a cash reimbursement basis. The Society also offered "the labor of its members to assist with this project... and professional veterinary service."

Wildlife Mewsletter--Arizona Game and Fish Department ---- July 24, 1981

ARIZONA DEPARTMENT OF G. & F. "FINDS" BIGHORN SHEEP

Two lambs are known to have been born to recently transplanted desert bighorn sheep on the Muleshoe Ranch in the Galiuro Mountains this season, and it's possible the total of new lambs there may be nearer four or five.

One of the lambs has been sighted within the 300-acre Muleshoe enclosure where the sheep were released last fall. The other was born to one of two ewes that escaped from the fenced area soon after their release. A rancher first reported seeing the yearling and adult ewes several miles south of the enclosure, and shortly thereafter they were located from the air. Both ewes and the lamb are still in the area.

The rest of the Muleshoe sheep are doing well. More than the one known lamb may be in the enclosure, but department personnel won't be going inside for another few weeks.

A rocky mountain bighorn that had been lost to radio contact in the Blue River area has been located near Point of Pines on the San Carlos Indian Reservation, some 45 - 50 miles away. The radio-collared ewe was one of a group of rocky mountain bighorns transplanted from Colorado to the Blue Rnage Primitive Area starting in 1979. Her tracking signal was last heard shortly after her release in the Bush Creek-Foote Creek area.

It's surprising this ewe didn't want to stay near her group of sheep, and it's possible that she has produced at least one lamb in the time she's been "lost."

WILDLIFE NEWSLETTER-- Arizona Game and Fish Department - July 17,1981

THE YEAR THE SHEEP WENT BLIND

So went the heading of an article in the Outdoor Section of the Missoulian(Missoula, Mt). newspaper of March 11, 1982. At that reporting the malady that had struck many of the bighorn sheep of the YellowstoneNational Park had subsided. John Stromnes reported that "Officials say a herd of bighorn sheep in northern Yellowstone Park is on the mend after a winter in which 10 percent or more of the herd died after going blind.

Some sheep died because they were unable to forage, some fell to their deaths off cliffs, and some blind animals found wandering along park roads were destroyed by NPS Rangers. One survey in January determined that about one-fourth of the herd was infected with inflammation og the corneas of their eyes, but not all the animals went blind as a result. In some cases sheep infected with the disease have completely recovered, according to Joan Anselmo, public information officer for the NPS. There were about 500 animals that made up this herd of sheep in the northern part of the park near Mammoth and Gardiner.

Although this was the first recorded outbreak of the disesase among Yellowstone bighorn sheep, Anselmo said" it is part of the natural cycle of things here". Bacteria that officials beleive caused the problem are in the environment all the time, she said. Conditions were just right for an outbreak of the disease apparantly, although these were not stated.

The suspected culprit causing the blindness in the Yellowstone sheep is a tiny intercellular bacteria called chamydia according to Dr. William Quinn, bureau chief of the Veterinary Diagnostic Laboratory in Bozeman. Quinn, whose lab is part of the stateDepartment of Livestock, aided in identifying the bacteria from samples taken from dead sheep in December and January. Quinn said the bacteria probably caused an inflammation of the cornea in the sheep, resulting in keratoconjunctivitis--or pinkeye. The inflammation eventually could cause the sheep to losesight in one or both eyes. He said that similar diseases have been diagnosed in domestic sheep and cattle. Quinn also stated that he has been unable to prove conclusively that the bacteria caused the blindness, because he has not been able to grow the bacteria in the laboratory. If a culture of the bacteria could be grown, and if a healthy sheep was exposed to the bacteria and became infected that would be conclusive proof.

The problem came to the attention of the Park Service on December 13th when wildlife photographers noticed the disease in a herd of sheep located near Mammoth. The infection is apparantly transmitted by head-butting or head to head contact. Many bighorns that were first infected were rams engaged in head-butting contests that male sheep use to establish dominance within the herd. By late February, the disease was fairly well distributed between both male and female sheep according to Anselmo. With the advent of Spring the herd of sheep were healing.

News article received from Robert L. Kroner--Wilderness Consultants, Bethlehem, Pa.

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DESERT BIGHORN COUNCIL

1982 BURRO COMMITTEE REPORT

During the business session of the Desert Bighorn Council held at Borrego Spring in April Steven D. Kovach, Chairman of the Burro Committee reported concerning what has recently taken place concerning the feral burro and it's problems in the southwestern states.

In the State of Nevada both the Bureau of Land Management and the Division of wildlife agree that there are no feral burro problems in or adjacent to bighorn ranges. This is not to infere that burro problems do not exist in Nevada.

In the State of New Mexico the Court fight continues over the Bandelier National Monument burro removal operations. The appeal by the animal protection groups is still in the Appeals Court. There have been no changes during the past year.

In Arizona during the fiscal year of 1981 the Bureau of Land Management removed 899 burros; the majority of the burro removal activity occurred in the Black Mountains outside of Kingman. A total of 300 burros had been removed. The goal is 600 plus. Up until January helicopters and cowboys were used to herd burros into corral traps. The next phase once the rains stopped will be the use of water traps. These traps are similar to what Bob McQuivey uses on bighorn in the River Mountains of Nevada; that is, when he is not giving his sheep boat rides across Lake Mead. The feral burro population within the Black Mountains is estimated at 1,800. The BLM's management plan calls for the retaining of 400 burros as a managed herd in the Black Mountains. Plans also for the upcoming fiscal year includes continuing efforts in the Black Mountains plus making some initial removals from the Walapai-Acquarius Mts. The latest word from the Grand Canyon National Park is no burros. Maybe the impossible has been accomplished.

NOTE: Other and later discussion concerning GrandCanyon indicated that the Fund for Animals did spend some $600,000 in their burro removal program at a cost of approximately $1,000 per burro and that the Fund still has about 200 burros in a corral that they have been unable to give away at this time.

California saw a tremendous amount of activity during the past year by three different agencies. The BLM continues their ambitious burro reduction efforts within the California Desert Conservation Area (CDCA). The EIS for the CDCA calls for all feral horse and burro reduction efforts to be completed by end of FY-85. During FY -81, the first year under the EIS, a total of 1,500 feral burros were removed; all from the Saline Valley area. The goal this fiscal year within the CDCA, is 1,620 feral burros. The state BLM feral burro coordinator feels that although the BLM is behind the schedule listed in Appendix F of the EIS for the CDCA, the BLM is doing a darn good job. Owing to the scope of the project and current funding levels, the Desert Bighorn Council Burro Committee would have to agree.

Recent surveys in the Inyo Mountains by Dr. Wehausen found no current burro activity. More importantly, however, bighorn were found to be utilizing areas previously impacted by burros. Richard Weaver, CDFG, proposed the following hypothesis: BLM's extensive burro removals from the Saline Valley area created a void which was filled by burros from the Inyo Mountains.

A review of what happened and current activities at the China Lake Naval Weapons Center: In early 1980 the Navy and BLm entered into a Memorandum of Understanding (MOU) which allowed the BLM to live capture feral burros from the airfield operations area. The removals were run like any other BLM burro roundup, except for the fact that the Navy totally reimbursed BLM's expenses. From March 1980 through January 1981 1,258 burros were removed. During this same period the number of burros occupying the area actually increased, not decreased Seasonal elevational migration and the void filling concept are beleived to be contributing causes. Due to safety requirements for the airfield, its operations, and the nearby community, the station command opted for the "emergency direct reduction". During two weekends in March 1981 three shooters put down 649 burros. Most of these animals received gross field necropsies. The general results agreed throughout, the burros were starving to death. Not surprisingly, the Navy was sued by a "Large group of animal protection interest". A settlement provided for no more shooting and allowed the animal protection groups to live capture feral burros from the airfield operations area. Between June 1981 and February 1982 the

animal protection groups removed an additional 606 burros. During this 22 month period 19 months of removal efforts by one means or another resulted in 1,513 burros removed from an area 275 square miles in size. A removal density of 5.5 burros per square mile. Additionally the Animal Protection Institute was (and is) claiming that the Navy does not have a feral burro problem at China Lake.

In May 1981 the Navy released their draft EIS for feral burro management. At that time the preferred alternative was total removal by shooting. Of the 58 comments received to the Draft EIS, Animal Protection Institute and the law firm for Fund for Animals submitted the longest responses at 21 pages and 25 pages respectively. The majority of the comments opposed shooting and preferred live removals. The Final EIS was released in November 1981; the record of decison was filed on 3 February 1982. Due to public responses and pressure the Alternative selected was that an 18 month period of live capture removal is to be followed by shooting the burros still remaining.

For the live removal part of the management plan, the Navy and the BLM have another MOU. Between January and May of this year and next year, BLM personnel will utilize corral traps to capture burros; whereas from June through December water traps will be used. The burros are then transported to the fair grounds in Ridgecrest by the BLM. For this work the Navy pays the BLM $50. per burro. This figure covers virtually all costs encurred by the BLM. Once delivered to the fair grounds, a consortium of 6 animal protection groups takes the burros. This consortium must provide all veterinary care, feeding, freeze branding with the anchor design, transportation to private adoption centers, adopting out the burros, plus pay rent for facilities used at the fair grounds. There is no estimate of these costs, norwill the consortium provide any figures. Removal of feral burros under the management plan started in late February. To date 643 burros have been removed, 143 Ahead of schedule. An estimated 4,000 remain to be had.

One last note for China Lake. Recent discussions with officials at the Weapons Center revealed that interest remains high for conducting bighorn reintroductions in the future.

DEATH VALLEY NATIONAL MONUMENT:

Each August the NPS conducts an aireal census of their burro population. The annual incerese in the size of Death Valley's burro population is coservatively estimated at 15%. The 19 81 population count was 2,501 by direct count. During this past winter it was discovered that burros had crossed the valley floor and are now in the southern end of the Black Mountains (located in the southeastern portion of Death Valley). Approximately 45 bighorns do inhabit the southern end of the mountain range, however, the burros have not yet reached the key springs utilized by the bighorns. This summer will be the test if the NPS cannot remove the burros.

Burros have been known to eat some rather unusual forage items in the past. However, burros occupying the Eagle Borax Area, which is located on the western edge of the valley floor somewhat due east of Telescope Peak, are consuming salt grass--all that they can reach. With practice runs (more or less) completed at Bandolier and Grand Canyon the NPS figured they were ready for the big time at Death Valley. On 2 November 1981 the long awaited EIS covering Death Valley's burros was released. The comment period ran through 25 January 1982 during which time 201 written comments were received. NPS also conducted two public meetings; one in Nevada and one in California. Surprisingly, many of the comments received actually preferred the shooting option over the extensive, and costly, live removal alternatives.

At this time there is no indication of when the final EIS will be written and released.

The BLM's proposed fees increases for the "Adoption" of captured horses and burros did go into effect on Janauary 2, 1982.

The new fee schedule calls for a charge of $200 per horse and $7 5 per burro adopted. Some people were of the opinion that these newly adopted fees would reduce the demand for feral horses and burros and would result, in turn of the BLM's falling short of adopting out the targeted 11,000 horses and burros during FY-1982. It appears, however, at present, that the BLM is having no problems finding people who want to adopt burros and horses.

It has been learned in Nevada that aireal census of burros can be conducted with a greater amount of accuracy by use of helicopter than be fixed wing aircraft. The slower forward speed of the helicopter leads to greater accuracy in observation of the animals. The same conclusion had been reached during aireal censuses conducted on bighorn sheep in Nevada and in Arizona also.

REPORT ON BIGHORN MOUNTAIN AND CASTLE PEAK AREAS

Dr. Loren L. Lutz, President of the Society reports to Glenn Sudmeier the water coordinator for the Society that during this past month of May he had with member George Taylorson made a very extensive review of the Bighorn Mountain and Castle Peaks area by horseback.

Dr. Lutz states: " Our findings--cattle are not using the area, there is no burro sign, and the range is in good shape.

What was disappointing, though, was the absence of any sheep sign in their usual haunts for instance, the lambing area had not been used for years.

I've spent a lot of time in this region--once with Dick Weaver and Jerry Mensch, and once for a week by myself, with horse, and many times exploring with other parties. It was here that I showed my son, at age eight, his first sheep. During those years it was no problem showing off the sheep.

The fact that we saw no sign or sheep doesn't mean they aren't there, but it does alarm me. I have talked with Ron Vickrey who has agreed to hold a sheep count at Doe Springs, which has some cleanout problems. Also Willow Springs was unavailable for wildlife and needs some more work done on it , plus piping and trough installation.

Marvin Wood has set July 17, 18, and 19 for the counts in the Old Woman Mountains. He will be needing twenty volunteers in order to do a good job.

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FIVE LAMBS BORN IN SOUTH WARNER MOUNTAINS

Mr. Paul Wertz, Information Officer for the DFG's Region one office in Redding announced on May 22nd that five lambs had been born within the prevous six weeks and sighted with the small band of California bighorn sheep apparantly determined to make Modoc County's Warner Mountains a permanent bighorn residence.

During a survey on Thursday May 20th, Doug Thayer, Department of fish and Game wildlife biologist, and Ernie Camilleri, Modoc National Forest wildlife biologist, said they also counted 15 other sheep, an indication the entire band came through the year's harsh winter without losses.

"The only way the news could be better would be if we spotted a sixth lamb," said Thayer, alluding to the presence of six adult ewes.

Chances are not good, however, that a sixth lamb ia on the way or already exists because one of the six adult ewes may be 12 to 14 years old, the DFG said. The ewe, still wearing a live radio transmitter collar, is one of the original 10 bighorn transplanted from British Columbia to an enclosure at Lava Beds National Monument in eastern Siskiyou County in 1971.

Another article in this issue tells of the disease which killed the 32 bighorn sheep remaining in the Lava Beds enclosure after the successful move of four of the Lava Beds Sheep to the Warner Mountains in February 1980, and the tragic loss of other sheep during the capture and transfer efforts.

It has also been reported in T.S. of the capture and transfer of ten California bighorns from the Mt. Baxter herd to augment the nucleus from Lava Beds in the Warner Mts., a month earlier.

Three of the 20 bighorn now roaming the eastern slopes of the Warners are from the Lava Beds band. Eight lambs have been born since the bighorn were moved to the Warners in the Spring of 1980 and two sheep have died.

Report courtesy of Dick Weaver, DFG--Sacramento, Calif.

RESEARCHERS STUDY SICK BIGHORN LAMB

An ailing bighorn lamb, which researchers hope will help them determine the cause of death of 44 other lambs near Palm Desert, was being nursed back to health on June eigth at the San Diego Zoo.

Using a $3,000 net-firingrifle, researchers in a helicopter captured the ailing lamb which they hope will help them isolate a virus that destroyed the other lambs born this year in the Santa Rosa Mountains.

After being placed in quarrantine at the San Diego Zoo it was determined that the lamb was suffering from pneumonia and was in serious physical condition.

Jim DeForge of the Desert Bighorn Research Institute stated that they were very pleased to capture the lamb while it was still alive and that the capture was just "in the nick of time." For the first time we believe that we are getting close to the data we need in the effort to solve the problems effecting this herd of desert bighorn sheep."

"Researchers from the California Department of Fish and Game shot the 19foot triangular net over the lamb. The lamb is receiving antibotics and fluid therapy at the zoo.

The lamb is an eight to ten week oldmale sheep. The lamb seems to be responding to its treatment. The lungs are reported to have been rather severely affected by the pneumonia, but that it now has a good chance for survival.

Even if the lamb dies, virologists may be able to conduct tests that will benefit the remaining herd, according to DeForge.

The young animal was spotted on the range in a moribund condition--head down, very depressed, He said. The mother couldn't get it to stand.

The research team is in the second year of a study of Santa Rosa bighorn, a dwindling herd once considered among the largest and most stable in the State of California.

This year like most every year the majority of the ewes in the herd have given live birth to a lamb. For the second year of the study it has been found that virtually every lamb of the so me 43 or 44 lambs born to the herd have died. The year of 1981 only one lamb

as known to survive, and now in 1982, the only known lamb survivor is hospitalized in the San Diego Zoo Hospital.

If the ravages of pneumonia induced by the virus continues then it is obvious that the herd of Peninsular desert bighorn sheep of the Santa Rosa Mountains will become extinct. It is known that there have been some 16 or 17 of the desert mountain ranges of California in which the herds of bighorns of twenty years ago no longer exist.

EDITORIAL OPINION And still the California Legislature refuses to do anything which will be of an assist in promoting the well-being of the bighorn sheep of California. In fact, and as noted in the previous issue of The Sheepherder. The Chairman of the Assembly Committee on Water, Parks and Wildlife, Assemblyman Norman Waters (D) of Northern California refused to take any testimony from Dr. Loren L. Lutz, who had travelled from Alhambra to Sacramento for the avowed purpose of giveing testimony before the Committee. Chairman Waters even went so far as to refuse Assemblyman Felando the courtesy of granting another date before the committee.

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The most important item for "The Sheepherders during the months of July and August are the waterhole counts that need to be made yearly. For example: Marvin Wood and his volunteers are conducting counts in the Old Woman Mountains July 17, 18, &19th.

July 24 - 25 - 26th. Dr Loren Lutz will be counting in the San Jacinto Mts. HE WILL NEEED SOME HELP. If you can give him a hand, then, give him a phone call at his office--see page one for phone number.

LABOR DAY WEEKEND--in Death Valley National Monument. Meet at monument headquarters on September 3rd for instructions and assignments, unless prior arrangements have been made. Contact Pete Sanchez, Death Valley National Monument, Death Valley, Calif. 92328 or phone hime at (714) 786 - 2331.

November 6th ----the Annual Dinner of the Society will be held at Michael's Restaraunt in Los Angles. Further particulars in the September - October issue. Bud Wiedeman has promised a non-smoking area for those of us who cannot tolerate the tobacco smoke. So plan to come.

CLARK RANGE WATER REPORT

A report has been recently received from Robert Campbell concerning his finding in the Clark Range.

Bob reports that he has found there has been some storage of water take place this year and with it there have also been some problems. There is presently some 1500 gallons of water in the tanks. There have been some leakages in the piping and these have been corrected he believes. One repair had been done by the D.F.G. and the other by himself and F.R. Thomas.

another item of interest is that the rancher whose livestock graze in the area has a watering trough out by the windmill and it is filled with water. Therefore any resident burro are probably out there in the Mesquite Dry Lake.

Also, the Gypsum miners, one canyon to the east of the big game guzzler have left, and there is no permanent activity there at the present. Bob also notes that he found numerous sheep beds all around the water facility when they were in there on June 26th, 1982.

The Clark Range facility was a work project of the Society for the Conservation of Bighorn Sheep . It was built in one day of work. There were 122 people who signed the log book on that day. It is believed that there were quite a few people who failed to register that day. It waw certainly a record turnout of willing workers. A burro exclusionary fence was a part of this project.

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RADIO TELEMETRY ANALYSIS OF HABITAT UTILIZATION BY THE SANTA ROSA MOUNTAIN DESERT BIGHORN SHEEP

De. Jack C. Turner, PHD., Sam Houston State University, Huntsville, Texas has made several investigations among the bighorn sheep of the Santa Rosa Mountains of southern California. In this report Turner states: "The desert bighorn sheep (*Ovis canadensis cremnobates*) is a distinct ecological race of the northern Rocky Mountain bighorn species. Populations of this ecotype occur in remote, arid, precipitous regions of the desert in the southwestern United States. Althou-h generally concluded to be the smallest of the North American native wild sheep, it is considered to be the noblest and most elusive of all North American big game species. Despite the coveted revering by sportsmen and conservationists, the desert bighorn has sustained a chronic population depletion commensurate with an acute loss of habitat over the last hundred years. Nowhere is this reduction more dramatic than in the Colorado Desert of southern California where the desert bighorn has enjoyed legislative protection

since 1873. The century long protection has seemingly afforded them few benefits, as many populations have dwindled beyond reproductive resiliency, resulting in local extinctions. Once healthy populations have been reduced to drastically low numbers.

One of the common denominators in the demise of these populations has been human encroachment and a subsequent loss of habitat. Only recently has the importance of habitat protection been recognized as being the equal of, if not greater, than that of species protection.

The recent environmental awareness attitudes have provoked an exodus of people from urban to more remote regions. The deserts of southern California, once thought to be barren, uninhabitable and hostile wasteland, have provided a focus for the immigrant urbanites. Unfortunately, this has occurred at the expense of the state's wilderness habitat, and more directly, at the cost of much of the state's wildlife. The desert bighorn sheep is the largest endemic species inhabiting North American deserts. Consequently, their habitat demands are correspondingly large and uniquely specific. This study investigated the habitat utilization, seasonal distribution and movements of bighorn sheep in relation to critical habitat and habitat quality, and to document changes in these parameters with increased encroachment and habitat usurpation within the Santa Rosa Mountains, the northern limits of which abuts the growing metropolis of Palm Springs.

Twenty free-ranging desert bighorns were immobilized on the eastern slopes of the Santa Rosa Mts. A helicopter was utilized and the Cap-Chur rifle used to capture the sheep. Ten of the sheep (6 females and 4 males) were equipped with radio-telemetry collars. The other ten sheep were given identifying collars--color coded.

Theradio-collared sheep were monitored on foot and from fixed and rotary winged aircraft with radio-tracking equipment on a weekly basis during the first year of the study, monthly during the second year of study, and during seasonal movements and the summer during the third year. Presently, bighorn sheep are surveyed once during the winter season and intermittently during the summer months of May through September.

Summer ranges of Patriarchal groups, consisting only of rams of age greater than three years, showed summer home ranges with radius of 5 to 19 kilometers. Winter ranges did not excede 8 kilometers and were remote from summer home ranges. Size of summer home range is influenced by the reproductive season as the rams were attending the several waterholes searching for breedable ewes. The rams each season used the same corridors between summer and winter ranges. These routes seem to be ancestral and are considered critical for maintenance of herd and, possibly, population integrity.

Matriarchal bands, consisting of all-age ewes and rams to three years of age, showed significantly smaller home range patterns during both summer and winter--up to three kilometers for the summer and from 1.5 to 7 kilometers in winter. The importance of water during the summer is evidenced by its central position within the summer range. Water holes are not of of central importance within the winter home range

Individual animals within both ewe and ram groups showed 100 percent home-range fidelity to both summer and winter home ranges over a seven-yearperiod. Home-range fidelity averaged 89 percent for 210 individuals within the same seven-year period. Immigration was less than two percent.

Lambing areas were select pieces of habitat--generally not included within seasonal home range of barren ewes, juvenile rams or bachelor ram herds--where lambs were born annually in consecutive years. These sites were consistently observed in extremely precipitous, secluded areas with ready access to escape cover. The essentiality of these ancestral sites is suggested by the 93 percent fidelity of the ewes born on the lambing site.

The desert bighorn sheep is not characterized by seasonal, vertical migration pattern. Typically, desert bighorn sheep are found at elevations ranging from 275 to 1,525 meters and an average of 961 meters. (approx. 3,000ft). The crest of the Santa Rosa Mts. is 2,470 meters. Seasonal drift away from summer concentrations around water holes occurs laterally along the mountain block. Vertical movements within the elevational optimum can occur during the onset of the spring growing season, when bighorn sheep follow newly sprouting vegetation up from lower elevations. Even so vertical migration can be impeded by lack of suitable escape cover such as precipitous rocky habitat in concert with forage competition with mule deer.

The above report was originally printed in the National Geographic Society Research Reports, Volume 13, pages 6 35 - 640

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BURRO IMPACT ON BIGHORN HABITAT STUDIED

Dr. Charles L. Douglas of the National Park Service has been studying the effects of feral burros on the bighorn habitat of the Death Valley National Monument. The study has been eight years in building and has nearly five years yet before its completion.

The problem of exotics is widespread in the Park System--mongoose, feral pigs in the Great Smoky Mountains; feral goats and rats in Hawaii and the feral burros in Bandelier, Grand Canyon and Death Valley and Lake Mead. Studies in Death Valley National Monument (DEVA) began in 1973. Overgrazing led to reduction in habitat of the desert bighorn of DEVA. Burro control was stopped in the 1960's as previously noted as were the results of ceasing of control efforts. Subtle changes in the ecosystem such as changes in soil organisms, losses of invertebrate segments of the food web, changes in small mammals, impacts on ground-nesting

birds, and overall effects on nutrient and energy exchange, may neverbe fully understood. Recovery may require centuries, however enlightened management may be able to shorten the recovery period.

Vegetational mapping is being done.

During the sessions of the Desert Bighorn Council in April 1982 Mr. Tim E. Ginnett a Graduate Student of the University of Nevada---Las Vegas reported some of these interactions in the paper entitled"Seasonal Patterns in diet selection by Feral Burros and Desert bighorn Sheep in Death Valley." Ginnett's study is taking place in the Cottonwood Mountains of DEVA. Elevations of the Mounument range from below sea level to some 11,000' above sea level. The majority of burro use is in the lower elevations, although they are found much higher and nearly to the upper extremes.

Transects have been established by Ginnett in order that he may study the food habits of both the bighorns and the burros analysis of fecal pellets of both species are used to determine the types of vegetation used and proportional ammounts of each. The first results of these fecal analyses show that on a year-around basis burros and bighorns vegetational uses compare very closely alike and are about 45% browse species and about 35% grasses. In additon both species use ofrbs and other vegetarion.

Ginnett found no physical interaction between burro and bighorn. However, burros do simply by their presence seem discourage bighorn from coming in to water sources for their needed drinks. Bighorn ewes have seemed to establish their home ranges in the vicinity of water sources from which the burros have been excluded, by appropriate fencing. One such water source in Quartz Spring.

Watering habits of the two species are very dissimilar. Bighorns will spend but a few minute at the water source before leaving. Burros on the other hand seem to prefer to remain at the water for periods of time which frequently last several hours. As previously note this presence of burros at the water source is itself enough to discourage bighorn usage .

It had been hoped that the feral burros might be removed from Death Valley by summer of 1982. This desire is not to be. The Final Envirmemtal Impact Statement has not yet been released for review by the public. And, nothing toward management can be done prior to final decision involving that Final EIS

PUBLIC COMMENT SOUGHT ON SHEEP PERMIT AUCTION

During the April 23rd meeting of the Arizona Game and Fish Commission, the Arizona Desert Bighorn Sheep Society proposed raising funds for management of the desert bighorn by setting aside an additional bighorn sheep hunt permit each year for an auction or raffle. The Commission directed the Department of Game and Fish to study this proposal and then to present its findings at a later meeting.

The Department of G. & F is now asking for public comments on this proposal.

Sheep permits are auctioned by Utah, Wyoming, Nevada and the Hualapai Indians. Last year Wyoming received $43,000 for a Rocky Mountain bighorn permit. Utah has a minimum bid of $20,000 which has been exceeded each of the past three years.

During the April meeting of the Commission members of the audience and of the Commission questioned the ethics of "selling wildlife" to the highest bidder

The Department wants to give the Public's views serious considereation in making its final recommendation to the Commission. Write to the Game Branch, Arizona Game and Fish Dept., 2222 West Greenway, Phoenix, Az. 85023

Wildlife Newsletter---Arizona G. & F. Department--June 25, 1982

LET'S AMEND THE WILD HORSE AND BURRO ACT

So says Mr. Rexford A. Resler, Executive Vice President, of the American Forestry Association in an editorial he wrote for the American Forests Magazine issue of June 1982. Resler states, in part: " Despite considerable effort expended and success realized in the adoption program, wild horse and burro populations continue to increase, severely damaging the habitat of these animals and wildlife alike.....it is essential that these animals be protected in their native ranges, that their health and herd vigor be enhanced by maintaining their habitat in optimum condition. That maintenance requires humane control of the population of a non-indigenous species that has few natural enemies

It is time, we believe, to amend the Wild Horse and Burro Act of 1971, to provide authority for the agencies to sell to individuals at public auction those excess healthy animals for which there is no adoption demand. W would prefer to see the excess animals used as saddle or pack animals rather than being slain, however humanely that would be done."

This same issue of A.F.A. magazine has a review, by Richard Pardo of bills now before the U.S. Congress to do that referrred to by Resler. They are H.R.5825 and S. 2183 which were introduced during March 1982. This Edior as the Legislative Secretary for the Sportsmen's Council of Central California has been trying to get the authors of the two bill to send him a copy of the bills. Both authors have been asked for copies since March on two separate occasions. Both requests have been ignored.

EDITORIAL OPINION: It does seem, to this writer that Senator James McClure of Idaho and Representative Don Young of Alaska are not very responsive to the requests of this citizen especially as this is an election year. I presume that many of the readers of this newsletter also are constantly bombarded by requests for funds to be donated to the politicians of both the state of residence and the Congress as they seek re-election to their posts of indifferece. I am bombarded by both major political parties.