

SPECIAL REPORT ON BANDELIER NATIONAL MONUMENT

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Bandelier National Monument was visited by the writer on July 11 and 12, 1940. On the first day I drove with Custodian Thomas, Ranger Voigt, and Fire Patrolman Wright to St. Peters Dome in the Santa Fe National Forest adjacent to the Monument and hiked down Capulin Canyon to a short distance above the Painted Cave, thence up on the mesa to the Stone Lions of Cochiti, and then back to the car. On the second day Custodian Thomas and I hiked from Headquarters up onto the mesa, down Loomis Canyon to the Rio Grande, up the Rio Grande to Frijoles Canyon, and back to Headquarters. Thus, although I did not see the entire Monument, I obtained a good cross section of the main types of biotic communities in the main part of the Monument. I did not visit the Detached Section which lies to the northeast of the main part and shall plan to go back and inspect that portion at some future time.

The main part of the Monument varies in altitude from about 5,000 feet at the Rio Grande River, to about 8,000 at the western boundary and consists of a mesa cut by a series of canyons which open into the Rio Grande Valley. These canyons from north to south are Frijoles, Loomis, Alamo, Capulin, Sanchez, and Desperation. The last two arise in the Monument but leave it before joining the Rio Grande. Alamo Canyon is the narrowest, deepest, and most rugged of all. It is not known certainly that anyone has ever succeeded in navigating its entire length. I saw this canyon only from a distance.

Most of the mesa in the Monument is covered with pinon-juniper woodland. The higher part toward the west, however, supports a yellow pine forest and this extends down into the canyons for rather long distances. There is some aligator bark juniper (Juniperus pachyphloea) within the Monument and this is believed to be the northeasternmost extent of the range of this species. There is a considerable amount of Douglas fir with the yellow pine, especially in the upper parts of the canyons. The commonest oak in the Monument is Gambel oak (Quercus utahensis) but there is another, nearly evergreen oak with entire leaves which I take to be Q. arizonica. In Capulin Canyon we noted a considerable amount of a barberry, the species of which I am not certain. It may be the exotic Berberis vulgaris which has established itself here. The tree, or cane, cactus (Opuntia arborescens) is sometimes met with in the very highest parts of the Monument although it is much more common down along the Rio Grande, thus showing wide range of habitat. Mountain mahogany is quite abundant in places and most of it seems to have been very severely browsed. Some of this browsing may have been

done by cattle rather than by deer since the Monument has not been fenced and trespassing of cattle has been common. In some places there is a considerable amount of grass. This is especially true of the lower parts of the canyons where they have become broadened. In some of the broader parts of Loomis Canyon there is an excellent stand of grama grass. Along the Rio Grande there is some desert vegetation but also some river bottom species. There are a few cottonwood trees and several hackberry trees which, although I did not take any material for identification, I took to be *Celtis occidentalis crassifolia*. There is also a considerable amount of ironwood (*Forestiera neomexicana*).

Bandolier National Monument is primarily an archaeological monument. However, because of its size and its variety of habitat, it is also a good wildlife area. Its greatest defect is that it does not contain a sufficient amount of suitable summer habitat. It has an abundance of excellent winter habitat but the two most important animals in this area, in numbers and in visitor interest, are deer and wild turkeys. The turkeys are especially important because this is the only Park Service area in Region III that can boast of wild turkeys. Saguaro National Monument has some turkey habitat and it is hoped that these birds may be reintroduced there in the near future and it is planned also to attempt a reintroduction in Mesa Verde National Park, but at present Bandolier is the only place where turkeys are found.

In winter both turkeys and deer are present in reasonable numbers in the Monument but in summer most of these animals go higher up in the Jemez Mountains. It is believed that turkeys are often killed, both in season and out, while they are outside of the Monument, and that they are often disturbed in their resting activities and so prevented from reproducing normally. If the western boundary of the Monument could be extended far enough to include a reasonable amount of this summer habitat the wildlife value of the Monument would be very greatly enhanced. Probably the time is not ripe for agitating such a change in boundary but it is something that should be definitely on the books for future action.

There are definitely known to be gray foxes and coyotes in the Monument and while we were hiking in Capulin Canyon Mr. Wright, who was separated from the party for a while, saw tracks of a mountain lion on the mesa south of the Canyon. Occasionally a bear is reported in the Monument but for the most part they range higher up. It is practically certain that there would be bear in the Monument if the boundaries were to be changed as suggested in the preceding paragraph. There are no beaver in the Monument at the present time. A pair was present in the lower part of Frijoles Canyon last spring but they have left, probably because of low water. It is my understanding that the Forest Service officials have hesitated to sanction the planting of beaver in the upper parts of Frijoles and Alamo Canyons in the Santa Fe National Forest because it was thought the Park Service might object on the ground that the beaver might come down into the Monument and cut some trees. This is a mistake. There is no reason whatever why the Park service should object to having beaver in either or both of these

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canyons or in Capulin Canyon: Nothing but benefit to the Monument could possibly result from the presence of these animals. The only reason why I recommended against planting beaver in Frioles Canyon in the Monument in my report of July 1938, was that in that part of the canyon that is within the Monument suitable food is so scarce that I do not believe beavers would stay there.

There are 15 to 18 wild burros in the lower part of the Monument and they are increasing each year. We saw several of them along the Rio Grande River. They stay mostly along the Rio Grande and in the lower parts of Loomis, Alamo, and Capulin Canyons and the adjacent parts of the mesa and do a considerable amount of damage to the range. These animals are exotic and are a menace to the native animals. In my opinion they should be eliminated from the Monument. It is my recommendation that Custodian Thomas be given authority to eliminate every last one of these animals if and when he can do so.

The Forest Service, at the present time, is fencing the western boundary of the Monument under a cooperative agreement with the Park Service. This is a most commendable step toward bringing the Monument under control. However, there is urgent need for a fence along the south boundary as well. Up to the present time there has been practically no control over either grazing or hunting in the southern part of the monument. This has been due, in part, to lack of fences and, in part, to lack of sufficient personnel. During nine months of the year Mr. Thomas has no ranger help at all and, since there is a considerable amount of travel to the Monument at all times of the year, he is practically tied down to the Headquarters area and there is no possibility of patrolling the distant parts of the Monument. The two essentials, therefore, before there will be any adequate control over the Monument, are the construction of a south boundary fence and the appointment of a permanent ranger for the Monument.

The water in the lower part of Frioles Creek is being polluted at present from two sources. The water containing cleaning solution which is used for washing cars in the utility area is allowed to flow into the creek, and the overflow from the sewage disposal plant, which was made inadequate through overuse while the CCC camp was in the Monument, also flows into the creek. The result is that the water often smells to high Heaven, many fish are killed, and any fish caught in that part of the creek taste so much like kerosene that they cannot be eaten. These matters have been brought to the attention of the Regional Office staff and the Regional Engineer has suggested a sump for taking care of the water from the utility area and a spray system for spraying the effluent from the sewage disposal plant onto the soil north of Frioles Creek. These suggestions are in line with those made to me by Mr. Thomas and, therefore, will be agreeable to him. It is hoped that the suggestions may be carried out before the end of the present CCC program at the monument.

****SWNM****

CONCLUSIONS AND RECOMMENDATIONS

1. Bandelier National Monument is a good wildlife area with a considerable range of altitude and a considerable variety of biotic habitat. It would be much better if the western boundary could be extended to include some suitable summer habitat for deer and wild turkeys. It is recommended that an extension of the western boundary be definitely planned for some time in the not too distant future.
2. Wild burros should be completely eliminated from this Monument at the earliest opportunity.
3. The south boundary of the Monument should be fenced as soon as feasible.
4. A permanent ranger position should be created and filled at this Monument as soon as possible in order to enable Mr. Thomas to carry out his commendable desire to protect all wildlife and all other features in the entire Monument.
5. Stream pollution, which is so at variance with all conservation practice, should be stopped within the Monument at the earliest possible time.